Preliminary Determination Summary

Equistar Chemicals, LP
Permit Numbers 1768 and N142M1

I. Applicant

Equistar Chemicals LP
PO Box 777
Channelview, TX 77530-0777

II. Project Location

Channelview Complex
8280 Sheldon Road
Harris County
Channelview, Texas 77530

III. Project Description

Equistar submitted an amendment to authorize additional natural gas for the flare (EPN 38E01) in anticipation of the proposed amendments to the 2002 Ethylene Production National Emission Standards for Hazardous Air Pollutants (NESHAP). Additionally, Permit by Rule (PBR) Registration No. 157688 and 157139, and Standard Permit No. 156142 will be incorporated by consolidation. No increases in emissions from maintenance, startup, and shutdown (MSS) activities are included in this project.

IV. Emissions

Air Contaminant	Proposed Allowable Emission Rates (tpy)
VOC	630.61
NO_x	2100.96
SO_2	152.32
CO	2133.92
PM	207.16
PM_{10}	192.66
$PM_{2.5}$	178.22
H_2S	0.03
NH_3	18.75

V. Federal Applicability

The following chart illustrates the annual project emissions for each pollutant and whether this pollutant triggers PSD or Nonattainment (NA) review.

Pollutant	Project Emissions (tpy)	Major Mod Trigger (tpy)	NA Triggered Y/N	PSD Triggered Y/N
VOC	4.30	25 for NA 40 for PSD	N	N
NO_x	19.37	25 for NA 40 for PSD	Y	N
SO_2	5.59	40	N/A	N
CO	99.79	100	N/A	N

The site is located in Harris County, which has been designated as a serious nonattainment area for ozone. The Channelview Complex is an existing major source of VOC and NO_X, and the project will result in a significant net increase of NO_X.

The Channelview Complex is a named source. The site is located in an attainment area for at least one pollutant, and is an existing major stationary source. The project emission increases are below the applicable significant significance threshold in 40 CFR § 52.21(b)(23)(i) for VOC, SO_2, and CO. PSD BACT and air quality analysis (AQA) requirements do not apply.

Pollutant	Project Increase (tpy) [1]	NA Netting Trigger (tpy)	PSD Netting Trigger (tpy)	Netting Required Y/N	Net Emission Change (tpy) [2]	Major Mod Trigger (tpy)	PSD Triggered Y/N	NA Triggered Y/N
VOC [3]	4.30	5	40	N	N/A	25	N	N
NOx [3, 4]	19.37	5	40	Y	105.43	25	N	Y
SO_2 [4]	5.59	N/A	40	N	N/A	40	N	N
CO	99.79	N/A	100	N	N/A	100	N	N

[1] Project Increases: Comparison of Baseline Actual to PTE (or Projected Actual) Increases only

[2] Net Emissions: Baseline Actual to PTE (or Projected Actual) for the project currently under review, Baseline Actual to PTE for all other increases and decreases within netting window.

[3] Ozone precursor. Either pollutant precursor can trigger BACT/LAER and impacts analysis, as applicable.

[4] $PM_{2.5}$ precursor. Not used to trigger $PM_{2.5}$ BACT/LAER or impacts analysis at this time.

VI. Control Technology Review

A control technology review is required for all new and modified sources. The following controls required by the permits satisfy LAER for emissions of NO_X, based on a review of recently issued permits from Texas and other states, and consideration of RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant.

Flare

The flare is designed to meet the requirements of 40 CFR Part 60.18 and to achieve a VOC compound destruction efficiency of 99% for compounds with up to three carbons, and 98% for compounds with four or more carbon atoms. The flare is equipped with a continuous flow monitor and composition analyzer.

VII. Air Quality Analysis

The air quality analysis (AQA) is acceptable for all review types and pollutants. The results are summarized below.

A. Minor Source NSR and Air Toxics Review

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
SO_2	1-hr	3.47	14.3

Table 2. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
SO_2	1-hr	3.47	7.8
SO_2	3-hr	3.12	25

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
SO_2	24-hr	1.39	5
SO_2	Annual	0.28	1
NO_2	1-hr	3.65	7.5
NO_2	Annual	0.29	1
CO	1-hr	20.89	2,000
CO	8-hr	1.67	500

The GLC_{max} are the maximum predicted concentration associated with one year of meteorological data.

The justification for selecting the EPA's interim 1-hr NO_2 and 1-hr SO_2 De Minimis levels was based on the assumptions underlying EPA's development of the 1-hr NO_2 and 1-hr SO_2 De Minimis levels. As explained in EPA guidance memoranda[1,2], the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 and 1-hr SO_2 NAAQS.

VIII. Offsets

The site is located in Harris County, which has been designated as a serious nonattainment area for ozone. The Channelview Complex is an existing major source of VOC and NO_X, and the project will result in a significant net increase of NO_X.

When issued, the permit requires that the permit holder offset the project emission increase for facilities authorized by this permit prior to the commencement of operation, through participation in the TCEQ Emission Banking and Trading (EBT) Program in accordance with the rules in 30 TAC Chapter 101, Subchapter H.

[1] www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf

[2] www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

The permit holder shall use 23.3 tons per year (tpy) of NO_X credits to offset the 19.4 tpy NO_X project emission increase for the facilities authorized by this permit at a ratio of 1.2 to 1.0.

Prior to the commencement of operation, the permit holder is required to obtain approval from the TCEQ EBT Program for the credits being used and then submit a permit alteration or amendment request to the TCEQ Air Permits Division (and copy the TCEQ Regional Office) to identify approved credits by TCEQ credit certificate number.

IX. Alternative Site Analysis and Compliance Certification

The applicant has submitted the required demonstration relating to consideration of alternative sites and Clean Air Act compliance status for sites owned or operated by the applicant (or by any entity controlling, controlled by, or under common control with the applicant). The analysis demonstrated that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that location.

X. Conclusion

As described above, the applicant has demonstrated that the project meets all applicable rules, regulations and requirements of the Texas and Federal Clean Air Acts. The Executive Director’s preliminary determination is that the permits should be issued.

Special Conditions

Permit Numbers 1768, PSDTX1272, and N142M1

1. This permit covers only those sources of emissions listed in the attached table entitled “Emission Sources - Maximum Allowable Emission Rates” (MAERT), and those sources are limited to the emission limits and other conditions specified in that table.

Federal Applicability

2. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):

   A. Subpart A, General Provisions.

   B. Subpart K, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.

   C. Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.

   D. Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

   E. Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

3. These facilities shall comply with all applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61:

   A. Subpart A, General Provisions.

   B. Subpart J, National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene.

   C. Subpart V, National Emission Standard for Equipment Leaks (Fugitive Emission Sources)

   D. Subpart FF, National Emission Standard for Benzene Waste Operations

4. These facilities shall comply with all applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:

   A. Subpart A, General Provisions.

   B. Subpart G, National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater.

   C. Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks.

   D. Subpart YY, National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards.

E. Subpart FFFF, National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing.

F. Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

G. Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

Emission Standards and Operational Specifications

5. Tanks are approved to store the liquids on the Approved Product List represented in Attachment A.

6. The true vapor pressure of any liquid stored at this facility in an atmospheric tank shall not exceed 11.0 psia.

7. Storage tanks and storage vessel are subject to the following requirements. The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the volatile organic compounds (VOC) has an aggregate partial pressure of less than 0.50 pound per square inch, absolute (psia) at the maximum feed temperature or 95 ◦F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.

A. The tank emissions must be controlled as specified in one of paragraphs below:

(1) An internal floating deck or roof or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

(2) An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

B. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR §60.113b, Testing and Procedures, to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.

C. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

D. Except for labels, logos, etc. not exceed 15 percent of tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white, gray or specular color. Storage tanks must be equipped with permanent submerged fill pipes.

E. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-

month period. The record shall include tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions from tanks shall be calculated using the methods that were used to determine the MAERT limits in the permit application Form PI-1 dated December 5, 2016. Sample calculations from the application shall be attached to a copy of this permit at the plant site.

8. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable emission rates table. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than one weight percent are not consistent with good practice for minimizing emissions with the exception of safety valves listed below and those that discharge directly to the atmosphere as a result of fire or failure of utilities.

PSV Number	Service	Set	Pressure, psig Operating
38014	TK3912 Make Line	275	25
38065	TK3913 Make Line	250	30
38066	TK3913 to Loading	250	30
38015	P3908A/B Discharge	275	30
38013	TK3911 Make Line	150	25
39021	TK3901 Suction Line	180	25
39022	TK3904 Discharge Line	180	25
39023	P3903A/B Discharge	275	137
38017	P3903A/B Discharge	275	137
39016	TK3902 Suction Line	180	25
38036	TK3901 Make Line	180	25
39001	P3901A/B Discharge	180	30
39017	TK3903 Suction Line	180	25
39036	P3902A/B Discharge	180	48
38012	TK3903 Make Line	180	25
39003	P3902A/B Discharge	180	48
39018	TK3907 Discharge Line	180	25
39043	TK3912 Discharge Line	180	25
39044	P3912A/B/C Discharge	200	156
39040	P3912A/B Discharge	255	53
38016	1st Feed System	275	160

PSV Number	Service	Set	Pressure, psig Operating
38035	3rd Feed System	720	275
38037	Gas Oil-w Mtr Station	180	50
38068	Treated PY Gas	180	20

9. Atmospheric relief valves in VOC service that are not equipped with rupture disks shall be checked for leaks on a quarterly basis with an approved gas analyzer. A leak shall be defined as 500 parts per million by volume (ppmv). There shall be no variance for inaccessible valves. All leaking valves shall be repaired or replaced at the earliest opportunity but not later than the next scheduled process shutdown.

10. Analyzer sample system vents or speed loops shall be equipped with vapor recovery or liquid recovery systems (vapor samples routed to flare system or liquids samples route back to process). Analyzer (gas chromatographs) vapor sample loops shall depressurize to atmospheric pressure during sample injection only and shall be routed to the flare during periods when a sample is not being injected. The following analyzer is exempt from the vapor recovery or liquid recovery system requirements: J-3904.

11. Cracking heaters and heaters associated with the Olefins Production Unit No. 1 shall not exceed the following firing rates: **(TBD)**

EPN	Facility Name	Firing Rate (MMBtu/hr)
34E01	Crack Heaters F3401 / F3402	540*
34E02	Crack Heaters F3403 / F3404	540*
34E03	Crack Heaters F3405 / F3406	540*
34E04	Crack Heaters F3407 / F3408	540*
34E05	Crack Heaters F3409 / F3410	540*
34E06	Crack Heaters F3411 / F3412	540*
34E07	Crack Heaters F3413 / F3414	540*
34E19	Crack Heater F3415	270
34E18	Ethane Cracking Heater F3418	270
38E04	Superheaters F38001A / F38001B	380*
34HTHTRS	34HTHTR Total	4,700
EF3419	Cracking Heater 19	640
Cracking Firing Limit for Cracking Heater 19 and 34HTHTR Total		5,275
36E05	Regen Heater F3601	25
37E03	Recycle Heater F3701	25
Firing Limit Total		5,315

* The firing rates are sum of two heaters' firing rates.

The heating value of the fuel (Btu/scf) and the fuel flow rate shall be continuously monitored for the cracking heaters, ethane heater, and steam superheaters. Quality-assured (or valid) data must be generated when the fired unit is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the fired unit operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Compliance with air contaminant emission limits shall be based upon the above firing rate.

12. Purchase gas combusted at this facility shall be sweet natural gas containing no more than five grains of total sulfur per 100 dry standard cubic feet.

13. Concentrations of NH_3 from the Cracking Heaters Stack (Emission Point Nos. EPN 34HTHTRS, EPN EF3419) shall not exceed 10 ppmvd on an hourly basis when corrected to three percent oxygen (O_2). The NH_3 concentration shall be tested or calculated according to one of the three methods listed below:

    A. The holder of this permit may install, calibrate, maintain, and operate a CEMS to measure and record the concentrations of NH_3. The NH_3 concentrations shall be corrected and reported in accordance with Special Condition No. 23.

    B. If a sorbent tube device specific for NH_3 is used, the frequency of the sorbent tube testing shall be daily for the first 60 days of SCR operation, after which, the frequency of the sorbent tube testing may be reduced from daily to weekly after operating procedures have been developed to prevent excess amounts of NH_3 from being introduced, and when operation of the SCR system has been proven successful with regard to controlling NH_3 slippage.

    C. As an approved alternative to sorbent or stain tube testing or an NH_3 CEMS, the permit holder may install and operate a second oxides of nitrogen (NO_x) CEMS probe located upstream of the SCR and the stack NO_x CEMS, which may be used in association with the SCR efficiency and NH_3 injection rate to estimate NH_3 slip.

    D. Any other method used for measuring NH_3 slippage shall require prior approval from the TCEQ.

14. The permit holder shall maintain the piping and valves in NH_3 service as follows:

    A. Audio, olfactory, and visual checks for NH_3 leaks within the operating area shall be made per shift.

    B. Immediately, but no later than 24 hours upon detection of a leak, plant personnel shall take one or more of the following actions:

    Locate and isolate the leak, if necessary. Commence repair or replacement of the leaking component. Use a leak collection or containment system to control the leak until repair or replacement can be made if immediate repair is not possible.

15. Records of AVO checks, any maintenance performed on piping and valves in NH_3 service, accidental releases, venting, and any corrective actions taken shall be maintained by the holder of this permit.

16. The OPI Flare (EPN 38E01) shall be designed and operated in accordance with the following requirements:

A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR §60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions.

The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR §60.18(f) may be requested by the appropriate TCEQ Regional Office to demonstrate compliance with these requirements.

B. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

C. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare.

D. The permit holder shall install a continuous flow monitor and composition analyzer that provides a record of the vent stream flow and composition to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition shall be recorded each hour.

The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ±5.0 percent, the temperature monitor shall be ±2.0 percent at absolute temperature and the pressure monitor shall be ±5.0 mm Hg.

Calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR §60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

The monitors and analyzers shall operate as required by this section at least 95% of the time when the flare is operational, averaged over a rolling 12-month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR §§60.18(f)(3) and 60.18(f)(4) shall be recorded at least once every hour. Hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit renew and amendment application (PI-1 dated December 05, 2016).

E. The OPI Flare (EPN 38E01) shall operate in accordance with the 40 CFR 63 Subpart YY "National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology Standards Residual Risk and Technology Review for Ethylene Production" signed by the EPA Administrator as a final rule on March 12, 2020, the

subsequently promulgated final version of that subpart, and Alternate Method of Control (AMOC) No. 157 issued May 12, 2020. Compliance with the requirements of this paragraph shall begin December 31, 2020 and occur as otherwise specified in the AMOC. Prior to the compliance requirements and schedule of this paragraph, Special Condition Nos. 16.A through 16.D shall apply. **(TBD)**

Compliance Assurance Monitoring

17. The following requirements apply to capture systems for the flare system (EPN 38E01). **(TBD)**

    A. Either conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

    B. If there is a bypass for the control device, comply with either of the following requirements:

        (1) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

        (2) Once a month, inspect the valves, verifying that the position of the valves and the condition of the car seals that prevent flow out the bypass.

    A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service per this permit.

    C. The date and results of each inspection performed shall be recorded. If the results of any inspection are not satisfactory, the deficiencies shall be recorded and the permit holder shall promptly take necessary corrective action, recording each action with the date completed.

Fugitive Emissions Monitoring

18. Piping, valves, connectors, pumps, agitators, and compressors in VOC service -28VHP

    Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment:

    The following requirements apply to piping, valves, connectors, pumps, agitators, and compressors containing or in contact with fluids that could reasonably be expected to contain greater than or equal to 10 weight percent volatile organic compounds (VOC) at any time.

    A. The requirements of paragraphs F and G shall not apply (1) where the Volatile Organic Compound (VOC) has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition

shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

- piping and instrumentation diagram (PID);
- a written or electronic database or electronic file;
- color coding;
- a form of weatherproof identification; or
- designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Paragraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve;

or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the

results recorded. For all other situations, the open-ended valve or line shall be monitored once within the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. If a relief valve is equipped with rupture disc, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days and a record of the attempt shall be maintained.

I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shut down as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shut down or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

19. Pump and compressors equipped with single seals in HRVOC (as defined in 30 TAC §115.10 unless exempted by §115.787) or greater than 10 weight percent benzene service shall be monitored with a leak definition of 500 ppmv rather than the 2,000 ppmv identified in Special Condition No. 17H.

20. In addition to the weekly physical inspection required by Item E of Special Condition No. 17, all connectors in non-HRVOC gas/vapor and light liquid service shall be monitored annually with an approved gas analyzer in accordance with Items F through J of Special Condition No. 17. Alternative monitoring frequency schedules (skip options) of 40 CFR Part 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, may be used in lieu of the monitoring frequency required by this permit condition. Compliance with this condition does not assure compliance with requirements of applicable state or federal regulation and does not constitute approval of alternative standards for these regulations.

21. In addition to the weekly physical inspection required by Item E of Special Condition No. 17, all accessible connectors in HRVOC gas/vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Items F through J of Special Condition No. 17.

A. Connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

B. The percent of connectors leaking used in paragraph A shall be determined using the following formula:

$$\frac{C_l + C_s}{C_t} \times 100 = C_p$$

Where:

C_l = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

C_s = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

C_t = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

C_p = the percentage of leaking connectors for the monitoring period.

Piping, Valves, Pumps, Agitators, and Compressors - Intensive Directed Maintenance - 28LAER

22. This special condition applies to components associated with the construction of Cracking Heater F-3419 as submitted in the application dated September 23, 2011.

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

i. piping and instrumentation diagram (PID);

ii. a written or electronic database or electronic file;

iii. color coding;

iv. a form of weatherproof identification; or

v. designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American

Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult-to-monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance.

Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program in accordance with items F thru J of this special condition.

In lieu of the monitoring frequency specified above, connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

The percent of connectors leaking used in paragraph B shall be determined using the following formula:

$$\frac{C_l + C_s}{C_t} \times 100 = C_p$$

Where:

C_l = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

C_s = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

C_t = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

C_p = the percentage of leaking connectors for the monitoring period.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

i. a cap, blind flange, plug, or second valve must be installed on the line or valve; or

ii. the open-ended valve or line shall be monitored once for leaks

above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak-checking for fugitive

emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Non-accessible valves shall be monitored by leak-checking for fugitive emissions at least annually using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown. A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs are being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, than the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

G. All new and replacement pumps, compressors, and agitators shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, connectors, compressor seals, pump seals, and agitator seals found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

I. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

J. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS), and does not constitute approval of alternative standards for these regulations.

K. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

L. The percent of valves leaking used in paragraph K shall be determined using the following formula:

$$\frac{(V_l + V_s)}{V_t} \times 100 = V_p$$

Where:

V_l = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

V_s = the number of valves for which repair has been delayed and are listed on the facility shutdown log.

V_t = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe to-monitor valves.

V_p = the percentage of leaking valves for the monitoring period.

M. Any component found to be leaking by physical inspection (i.e., sight, sound, or smell) shall be repaired or monitored with an approved gas analyzer within 15 days to determine whether the component is leaking in excess of 500 ppmv of VOC. If the component is found to be leaking in excess of 500 ppmv of VOC, it shall be subject to the repair and replacement requirements contained in this special condition.

Initial Determination of Compliance

23. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the cracking heaters (EPN 34HTHTRS for F-3401, F-3402, F-3403, F-3404, F-3405, F-3406, F -3407, F-3408, F-3409, F-3410, F-3411, F-3412, F-3413, F-3414, F-3418, and EPN EF3419 for F-3419). Three cracking furnace stacks, to be determined by the permit holder with agreement of the TCEQ Houston Regional Office may be tested as representative of the eight cracking furnace stacks, Ethane Heater (EPN 34E18), and Steam Superheaters (EPN 38E04). The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

A. The appropriate TCEQ Regional Office in the region where the source is located shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

(1) Date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit conditions, TCEQ, or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in B of this condition shall be submitted to the TCEQ, Office of Permitting and Registration, Austin.

Test waivers and alternate/equivalent procedure proposals for NSPS testing which must have the EPA approval shall be submitted to the TCEQ Houston Regional Office, Houston.

B. Air contaminants emitted from the cracking heaters, ethane heater, and steam superheaters to be tested for include (but are not limited to) NO_x and CO.

C. Sampling may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office.

D. The source being tested shall operate at maximum represented operating rates during stack emission testing. Primary operating parameters that enable determination of firing rates shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting.

If the source is unable to operate at maximum represented operating rates during testing, then additional stack testing may be required when higher represented operating rates are achieved.

E. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after all sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Houston Regional Office, Houston.

One copy to the Harris County Air Pollution Control Program, Pasadena.

Continuous Demonstration of Compliance

24. The permit holder shall install, calibrate, and maintain a predictive emission monitoring system (PEMS) to measure and record the in-stack concentration of NO_x from the Cracking Heaters (EPN 34HTHTRS for F-3401, F-3402, F-3403, F-3404, F-3405, F-3406, F -3407, F-3408, F-3409, F-3410, F-3411, F-3412, F-3413, F-3414, and F-3418, and EPN EF3419 for F-3419) when in operation.

A. A PEMS may be used for demonstrating continuous compliance if it can be proven to have the same or better accuracy, precision, reliability, accessibility, and timeliness as that provided by a hardware CEMS. All PEMS shall be subject to the approval of the TCEQ Executive Director. Owners or operators must petition the TCEQ Executive Director for approval to use PEMS. The petition must include results of tests conducted beforehand to demonstrate equivalent accuracy and precision of PEMS to that of hardware CEMS. Demonstrating equivalency of PEMS to CEMS shall be met by instantaneously comparing data collected by PEMS with that collected by a certified hardware CEMS or an EPA reference method. For a PEMS replacing a CEMS, both systems shall remain in place for at least an operating quarter collecting valid information before the CEMS is removed.

B. For any unit at which the PEMS is installed, PEMS initial certification by the TCEQ shall occur while the unit is firing its primary fuel. The owner or operator shall:

(1) Conduct relative accuracy testing for NO_x and O_2, or carbon dioxide (CO_2) per 40 CFR Part 60, Appendix B, Performance Specifications 2, 3, and 4, respectively, at low, medium, and high levels of the most significant operating parameter affecting NO_x emissions.

(2) Conduct statistical test analysis at low, medium, and high levels of the most significant operating parameter affecting NO_x emissions. A minimum of 30 successive paired data points which are either 15-minute averages, 20-minute averages, or hourly averages must be collected at each tested level before a reliable statistical test can be performed.

Data collection must be continuous at all times except when calibration of the reference method must be conducted for the purpose of collecting data for relative accuracy test audit (RATA).

The following three tests must be conducted to demonstrate precision:

i. A T-test for bias per Appendix A, 40 CFR Part 75, § 7.6. The test shall be conducted using all paired data points collected at all three tested levels.

ii. An F-test per 40 CFR §75.41(c)(1). The F-test must be conducted separately at the three tested levels.

iii. A correlation analysis per 40 CFR §75.41(c)(2). Calculation of the correlation coefficient (Equation 27) shall be performed using all paired data points collected at all three tested levels.

(3) For NO_x and CO and for the purpose of conducting an F-test, if the standard deviation (SD) of the reference method is less than either 3 percent of the span or 5 parts per million (ppm), use a reference method SD of the greater of 5 ppm or 3 percent of span.

(4) For diluent CO_2 or O_2 and for the purpose of conducting an F-test, if the SD of the reference method is less than 3 percent of span, use a reference method SD of 3 percent of span.

(5) For NO_x at anyone tested level, if the mean value of the reference method is less than either 10 ppm or 5 percent of the standard, all statistical tests are waived for that emission parameter at that specific tested level.

(6) For either O_2 or CO_2 and at anyone tested level, if the mean value of the reference method is less than 3 percent of span, all the statistical tests are waived for that diluent parameter at that specific tested level.

C. The monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of pound per million Btu at least once every week. All monitoring data and quality-assurance data shall be maintained by the permit holder.

D. Any PEMS downtime shall be reported to the appropriate TCEQ Regional Director per §117.345(d)(3) and necessary corrective action shall be taken. Quality-assured (or valid) data must be generated when the cracking heaters (EPN 34HTHTRS and EF3419) are operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed five percent of the time (in minutes) that the cracking heaters (EPN 34HTHTRS and EF3419) operated over the previous rolling 12-month period. Owners or operators shall demonstrate that all missing data can be accounted for in accordance with the applicable missing data procedures of 30 TAC 117.340. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

E. The appropriate TCEQ Regional Office shall be notified for each annual RATA in order to provide them the opportunity to observe the testing.

F. The owner or operator shall perform daily sensor validation. The owner or operator shall develop and implement plans that will ensure proper functioning of the monitoring systems, ensure proper accuracy and calibration of all operational parameters that affect emissions and serve as input to the predictive monitoring system, and ensure continuous operation within the certified operating range.

G. In accordance with the procedure of § 2.3.1, Appendix B of 40 CFR Part 60, a RATA must be performed every six months for each unit while firing its primary fuel. A RATA may be performed annually if the relative accuracy of the previous audit is 7.5 percent or less.

H. For each of the three successive quarters following the quarter in which initial certification was conducted, RATA and statistical testing must be conducted for at least one unit in a category of units in accordance with the procedures outlined for initial certification under Section B.

I. Any RATA exceeding 20 percent or statistical test exceeding the applicable standard shall be reported to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken.

J. When an alternative fuel is fired in a unit, PEMS must be re-certified in accordance with the certification procedures outlined for initial certification under Section B. Owners or operators may justify to the satisfaction of the TCEQ Executive Director that slight changes in fuel composition do not constitute an alternative fuel. No additional recertification procedures are required if the unit meets the current monitoring requirements when switching back to the normal fuel from an alternate fuel.

K. The system is required to provide valid emission predictions for at least 95 percent of the time that the unit being monitored is operated. The following rules for tuning without recertification shall be followed:

(1) The model did not change fundamentally.

(2) The model continues to operate within the initially certified operating ranges.

Otherwise, the system must be recertified. Any tuning must be documented, and the records must be made available during any future inspection.

L. All owners or operators shall develop a quality-assurance plan or manual that insures continuous and reliable performance of the PEMS. As part of the plan, owners or operators shall recommend a frequency for calibrating each sensor whose readout serves as an input to the model. All sensors, at a minimum, shall be calibrated as often as recommended by the manufacturer.

M. As an alternative to Paragraphs A.-L. of this condition, the permit holder may install a continuous emission monitoring system (CEMS) to measure and record the in-stack concentration of NO_x from the Cracking Heaters (EPN 34HTHTRS for F-3401, F-3402, F-3403, F-3404, F-3405, F-3406, F -3407, F-3408, F-3409, F-3410, F-3411, F-3412, F-3413, F-3414, F-3415, F-3418 and EPN EF3419 for F-3419) when in operation. The CEMS shall meet the requirements in special condition 23 A.-E. of this permit.

25. Opacity of emissions from cracking heaters, heaters, and decoking cyclones shall not exceed 15 percent averaged over a six-minute period except for those periods described in 30 TAC §111.111.

Production Limits and Recordkeeping

26. Production rates shall not exceed 11.3 billion pounds per year of all products. The holder of this permit shall maintain records on the operation of the facility for five years. Records shall include (but are not limited to) hours of operation, production rates, hours of operation of each heater unit, time period pre-regeneration gases are purged to each flare unit, and time period regeneration cycle emits to the atmosphere.

Cooling Tower

27. The VOC associated with cooling tower (EPN 38E11) water shall be monitored monthly with an air stripping system meeting the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or an approved equivalent sampling method. The results of the monitoring, cooling water flow rate, and maintenance activities on the cooling water system shall be recorded. The monitoring results and cooling water hourly mass flow rate shall be used to determine cooling tower hourly VOC emissions. The rolling 12 month cooling water emission rate shall be recorded on a monthly basis and be determined by summing the VOC emissions between VOC monitoring periods over the rolling 12 month period. The emissions between VOC monitoring periods shall be obtained by multiplying the total cooling water mass flow between cooling water monitoring periods by the higher of the 2 VOC monitored results. Cooling water sampling as required by 30 TAC Chapter 115 Subchapter H may be used in lieu of this special condition.

28. Cooling water shall be sampled once a week for total dissolved solids (TDS) and once a day for conductivity. On-line conductivity meter may be used in lieu of collecting daily sample. Dissolved solids in the cooling water drift are considered to be emitted as PM_{10}. The data shall result from collection of water samples from the cooling tower feed water and represent the water being cooled in the tower. Water samples should be capped upon collection and transferred to a laboratory area for analysis. The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. The analysis method for Conductivity shall be ASTM D1125-95A and SM2510 B. Use of an alternative method shall be approved by the TCEQ Regional Director prior to its implementation.

Wastewater

29. Process wastewater drains shall be equipped with water seals or equivalent; lift stations, manholes, junction boxes, any process wastewater collection system components, and conveyance, shall be equipped with a closed vent system that routes all organic vapor to a control device.

    Water seals shall be checked by visual or physical inspection quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls. Water seals shall be restored as necessary within 24 hours. Records shall be maintained of these inspections and corrective actions taken.

Diesel Engine

30. The following requirements shall apply to the Diesel Engine-Driven Air Compressor (EPN OP1EN1): **(TBD)**

    A. Fuel for the engine shall be limited to ultra-low sulfur diesel (ULSD) containing no more than 15 ppmw total sulfur.

    B. The engine shall be limited to 4,500 hours per year.

    C. The engine shall be equipped with a non-resettable hour meter.

    D. Compliance with the emission factors represented in the permit amendment application (PI-1 dated November 19, 2019) shall be demonstrated by retaining a copy of the manufacturers' certificate of conformity, or through other methods receiving prior written approval of the TCEQ Executive Director

Maintenance, Start-Up, and Shutdown Operations

31. This permit authorizes the emissions from facilities for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

    Routine maintenance activities, as identified in Attachment B of this permit, may be tracked through work orders or their equivalent. Emissions from activities identified in Attachment C shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

    The performance of each planned MSS activity not identified in Attachment C and the emissions associated with it shall be recorded and include at least the following information:

    A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;

    B. the type of planned MSS activity and the reason for the planned activity;

    C. the common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

    D. the date and time of the MSS activity and its duration;

E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis.

32. Process units and facilities shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements:

A. The process equipment shall be depressurized to a control device, transferred within the process unit, transferred to another process unit, transferred to a pressurized storage tank, or depressurized to a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with volatile organic compounds (VOC) partial pressure less than 0.50 pound per square inch, absolute (psia) at the highest of the actual temperature or 95°F may be opened to atmosphere and drained in accordance with Paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation, transferred within the process unit, transferred to another process unit, or transferred to a pressurized storage tank. If the VOC partial pressure is greater than 0.50 psi at either the actual temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel or closed liquid recovery system unless prevented by the physical configuration of the equipment, transferred within the process unit, transferred to another process unit, or transferred to a pressurized or an atmospheric storage tank. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.

D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

(1) For MSS activities identified in Attachment C, the following option may be used in lieu of item (2) below. The facilities being prepared for maintenance shall not be vented

directly to atmosphere until the VOC concentration has been verified to be less than 10,000 ppmv or less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement). If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of SC No. 28. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. Documented site procedures used to de-inventory equipment to a control device for safety purposes (e.g., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process;

(2) There is not an available connection to a plant control system (flare); and

(3) There is no more than 50 lbs of air contaminant to be vented to atmosphere during shutdown or start-up, as applicable.

All instances of venting directly to atmosphere per sub-paragraph E. of this condition must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment C.

33. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate RF shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.

(2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five-minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall be recorded and shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured as defined in (3) is less than 80 percent of the range of the tube and is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least two samples taken at least five minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000* mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated within 30 days prior to use with a certified pentane gas standard at 58 percent of the LEL for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A functionality test shall be performed within 24 hours prior to use on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 58 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane.

D. Gas Chromatograph. As an alternative to an instrument/detector, the analysis may be conducted in a laboratory. Bag samples of the gas discharged may be drawn and taken to an onsite laboratory to be analyzed by gas chromatography (GC). A minimum of two bag samples shall be drawn approximately ten minutes apart. A Tedlar bag, or a bag or glass container appropriate for the material to be sampled, shall be used and shall have a valve to seal gas in the bag or container. The samples shall be drawn as follows:

(1) The sample point on the equipment being cleared shall be purged sufficiently to ensure a representative sample at the sample valve.

(2) The sample bag shall be connected directly to the sample valve or to a pump that is connected directly to the sample valve.

(3) The sample valve and sample bag shall be opened to allow the bag to fill to approximately 80% of capacity. The sample connections shall be fitted such that no air is drawn into the sample bag.

(4) The two valves shall then be closed to seal the sample in the bag.

(5) The sample bag shall then be disconnected and placed in a dark container out of direct sunlight for transport to the analyzer.

(6) This process is repeated to collect additional samples.

(7) The sample shall be analyzed within 12 hours of collection.

(8) If condensation is observed in a bag sample, the sampling must be repeated using one of the modified bag sampling procedures in 40 CFR 60, Appendix A, Method 18 Section 8.

(9) At least two samples taken at least five minutes apart must satisfy the following prior to uncontrolled venting.

The laboratory GC shall meet or exceed the requirements of 40 CFR 60, Appendix A, Method 18 Sections 6 (Equipment and Supplies), 7 (Reagents and Standards), 9 (Quality Control), and 10 (Calibration and Standards). The sample shall be analyzed per Section 8.2.1.5 of Method 18, except the analysis of each bag may be performed in duplicate and use gas tight syringe through septums. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting. The recovery study for bag sampling and post analysis calibration is only required the first time a vessel is degassed and analyzed if the procedure meets the accuracy specifications of Method 18 and the analytical equipment is not modified. If the material content, temperature and pressure are the same among multiple vessels when sampling occurs, the post analysis calibration need only be conducted on sample(s) from one representative vessel.

34. Additional occurrences of MSS activities authorized by this permit may be authorized under permit by rule only if conducted in compliance with this permit's procedures, emission controls, monitoring, and recordkeeping requirements applicable to the activity.

35. Planned maintenance activities must be conducted in a manner consistent with good practice for minimizing emissions, including the use of air pollution control equipment, practices and processes. All reasonable and practical efforts to comply with Special Condition Nos. 29 through 33 must be used when conducting the planned maintenance activity, until the Commission determines that the efforts are unreasonable or impractical, or that the activity is an unplanned maintenance activity.

Netting & Offsets

36. This Prevention of Significant Deterioration (PSD) permit (PSDTX1272), 25.7 tpy NO_x project increase) is conditioned on the completion of the emission reduction project represented in the permit application (PI-1 dated September 23, 2011) as follows: **(11/12)**

Methanol Unit Shutdown (November 2008)	
Total NO_x Reduction:	780.4 tpy

These reductions shall occur prior to the start of operation of the facilities and activities authorized by the indicated PSD permit. The permit holder shall maintain records of these emission reductions.

Construction of the authorized facilities must begin as defined in 40 CFR § 52.21(b)(9), no later than five years after the all emission reductions identified in the NO_x netting analysis are actually accomplished. If construction does not begin as specified, the netting reductions will no longer be creditable.

This Nonattainment New Source Review (NNSR) permit (N142) is issued based on the permanent retirement of a TCEQ Emission Reduction Credit (ERC) for 22.4 tpy of VOC emissions reduction at Equistar's Chocolate Bayou Polymer Facility. This ERC provides offsets at the rate of 1.3:1 for the 17.2 tpy of VOC emissions authorized as a project increase by the indicated NNSR permit.

A. The permit holder shall use 22.4 tpy ECs of VOC from TCEQ credit certificate number 3520 to offset the 17.2 tpy VOC project emission increase for the facilities authorized by this permit at a ratio of 1.3 to 1.0. **(TBD)**

37. NNSR Permit Number N142M1 is issued/approved based on the requirement that the permit holder offset the project emission increase for facilities authorized by this permit prior to the commencement of operation, through participation in the TCEQ Emission Banking and Trading (EBT) Program in accordance with the rules in 30 TAC Chapter 101, Subchapter H. **(TBD)**

A. The permit holder shall use 23.3 tons per year (tpy) of NO_X credits to offset the 19.4 tpy NO_X project emission increase for the facilities authorized by this permit at a ratio of 1.2 to 1.0.

B. Prior to the commencement of operation, the permit holder shall obtain approval from the TCEQ EBT Program for the credits being used and then submit a permit alteration or amendment request to the TCEQ Air Permits Division (and copy the TCEQ Regional Office) to identify approved credits by TCEQ credit certificate number.

Permit by Rule

38. The following sources and/or activities are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). These lists are not intended to be all inclusive and can be altered without modifications to this permit. **(TBD)**

Authorization	Source or Activity
PBR 106675	Authorized a flare that was brought on to control H_2 streams from the process.
PBR 110688	Authorized chemicals used for cooling tower.
PBR 148101	Authorized dispersant usage.

Date: TBD

Permit Numbers 1768, PSDTX1272, and N142M1

Attachment A

Approved Chemicals List

Tank	EPN	Material
TK-3455	34E12	Waste Caustic
TK-38008	38E008	Slop Oil
TK-38009	38E009	Wastewater
TK-38010	38E010	Wastewater
TK-38011	38E011	Wastewater
TK-38302	38E07	PGO
TK-38303	38E08	LCO
TK-3901	39E01	Olefins Feedstock, PGO, raw py-gas
TK-3902	39E02	Olefins Feedstock, PGO, raw py-gas
TK-3904	39E04	Olefins Feedstock, PGO, raw py-gas
TK-3905	39E05	Olefins Feedstock, PGO, raw py-gas
TK-3906	39E06	Olefins Feedstock, PGO, raw py-gas
TK-3907	39E07	Olefins Feedstock, PGO, raw py-gas
TK-3911	39E11	Raw PGO, raw pygas
TK-3912	39E12	Treated PGO, raw py-gas, LTPG, raw PGO
TK-3913	39E13	PFO, PGO
TK-3914	39E14	LCO
TK-3943	39E43	LCO

Date: TBD

Permit Numbers 1768, PSDTX1272, and N142M1

Attachment B

Routine Maintenance Activities

Pump repair/replacement

Fugitive component (valve, pipe, flange) repair/replacement

Compressor repair/replacement

Heat exchanger repair/replacement

Process & Storage Vessel cleaning/repair/replacement

Date: TBD

Permit Numbers 1768, PSDTX1272, and N142M1

Attachment C

MSS Activity Summary

Facilities	Description	Emissions Activity	EPN
F-3419 and ancillary piping	process unit purge/degas/drain	vent to atmosphere	ENMSSROUT
Flare MSS	Olefins 1 Flare MSS	MSS venting to Flare	38E01

Date: TBD

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 1768, PSDTX1272, and N142M1

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
F34E00	OP1 Fugitives (5)	VOC	74.84	323.31
		NH_3	0.12	0.53
34FGWATER	OP1 Wastewater Fugitives (5)	VOC	1.35	5.89
		Acetone	<0.01	<0.01
EOP1FUGEXP	OP1 Fugitives (5)	VOC	0.46	2.01
EFUGNH3	OP1 NH3 Fugitives (5)	NH_3	0.27	1.18
34E08	Decoke Vent	CO	132.00	113.75
		PM	36.00	6.50
		PM_{10}	36.00	6.50
		$PM_{2.5}$	36.00	6.50
		VOC	0.11	0.10
EOP1DECOKE2	Decoke Vent 2	CO	310.00	59.60
		VOC	0.08	0.02
		PM	1.07	0.10
		PM_{10}	1.07	0.10
		$PM_{2.5}$	1.07	0.10
34E10	Reactor Regeneration Vent	CO	3.56	1.02
		SO_2	9.51	2.23
		VOC	1.38	0.17
38E11	OP1 Cooling Tower	VOC	10.58	19.87
		PM	6.62	29.00
		PM_{10}	3.31	14.50
		$PM_{2.5}$	0.01	0.06
35E03	Seal Oil Reservoir Vent	VOC	0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

35E04	Seal Oil Reservoir Vent	VOC	0.01	0.01
34PVD3420	Dilution Generator Vent	VOC	1.69	0.14
		Acetone	0.05	<0.01
34STMFUG	Dilution Steam Vent	VOC	0.85	1.86
		Acetone	0.02	0.05
38HTF3804A/B	Superheater Vents	VOC	3.81	0.01
34HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-3401 - F-3415; F-3418; F-3419 Common Stack Steam Super Heaters: F380001 A/B	NO_x	494.93	2,022.33
		CO	395.03	1,612.25
		SO_2	33.85	138.17
		PM	37.61	153.52
		PM_{10}	37.61	153.52
		$PM_{2.5}$	37.61	153.52
		NH_3	1.30	5.26
		VOC	24.98	99.18
EF3419	OP-1 Cracking Heater F-3419	NO_x	38.40	25.71
		CO	33.88	148.38
		SO_2	0.38	1.54
		PM	4.23	17.00
		PM_{10}	4.23	17.00
		$PM_{2.5}$	4.23	17.00
		NH_3	2.69	11.78
		VOC	0.64	2.57
36E05	Regeneration Heater F-3601	NO_x	2.50	2.63
		CO	2.06	1.95
		SO_2	0.18	0.19
		PM	0.19	0.18
		PM_{10}	0.19	0.18
		$PM_{2.5}$	0.19	0.18
		VOC	0.13	0.12

Emission Sources - Maximum Allowable Emission Rates

37E03	Recycle Heater F-3701	NO_x	2.45	10.74
		CO	2.06	9.02
		SO_2	0.18	0.79
		PM	0.19	0.82
		PM_{10}	0.19	0.82
		$PM_{2.5}$	0.19	0.82
		VOC	0.13	0.55
38E01	OPI Flare (6)	NOx	120.95	35.67
		CO	623.00	181.15
		SO_2	25.03	9.39
		VOC	1,377.22	53.45
38E3602	Shelter J-3602	VOC	0.01	0.02
38E3603	Shelter J-3603	VOC	0.08	0.34
38E3604	Shelter J-3604	VOC	0.02	0.05
38E3605	Shelter J-3605	VOC	0.01	0.01
38E3606	Shelter J-3606	VOC	0.01	0.01
38E3904	Shelter J-3904	VOC	1.28	5.62
OP1EN1	Diesel Engine Driven Air Compressor (7)	NOx	1.73	3.88
		CO	3.02	6.80
		SO_2	0.01	0.01
		PM	0.02	0.04
		PM_{10}	0.02	0.04
		$PM_{2.5}$	0.02	0.04
		VOC	0.16	0.37
39E03	Storage Tank 3903 (Wastewater/Storm Water)	VOC	1.93	5.00
37E09	Antifoulant Storage Tank 3709	VOC	0.28	0.01
38E07	Pyrolysis Gas Oil Tank 38302	VOC	7.38	0.88
		Benzene	0.05	0.01
38E08	Storage Tank 38303	VOC	2.07	0.23

Emission Sources - Maximum Allowable Emission Rates

39E13	Pyrolysis Fuel Oil Tank 3913	VOC	11.58	8.06
39E14	Storage Tank 3914	VOC	2.37	1.95
39E43	Storage Tank 3943	VOC	2.37	3.64
39E01	Storage Tank 3901	VOC	8.38	-
		Benzene	2.56	-
		H_2S	0.01	-
39E02	Storage Tank 3902	VOC	8.38	-
		Benzene	2.56	-
		H_2S	0.01	-
39E01 to 39E02	Storage Tanks (2 total)	VOC	-	24.68
		Benzene	-	10.62
		H_2S	-	0.02
39E04	Storage Tank 3904	VOC	5.45	-
		Benzene	1.45	-
		H_2S	0.01	-
39E05	Storage Tank 3905	VOC	5.45	-
		Benzene	1.45	-
		H2S	0.01	-
39E06	Storage Tank 3906	VOC	5.81	-
		Benzene	1.54	-
		H_2S	0.01	-
39E07	Storage Tank 3907	VOC	5.81	-
		Benzene	1.54	-
		H_2S	0.01	-
39E04-39E07	Storage Tanks (4 total)	VOC	14.06	38.94
		Benzene	1.92	9.61
		H_2S	0.01	0.01
39E11	Storage Tank 3911	VOC	2.27	6.84
		Benzene	1.59	4.80

Emission Sources - Maximum Allowable Emission Rates

39E12	Storage Tank 3912	VOC	2.67	7.95
		Benzene	1.87	5.56
OP1SMLT10	Antifoulant Tank 68423	VOC	0.32	0.01
34E12	Waste Caustic Tank 3455	VOC	0.51	1.62
38E008	Slop Oil Tank 38008	VOC	0.35	1.52
38E009	Wastewater Tank 38009	VOC	1.03	1.76
38E010	Wastewater Tank 38010	VOC	1.46	4.85
38E011	Wastewater Tank 38011	VOC	2.80	6.41
ENMSSROUT	MSS Vessel	VOC	4.37	0.05
EOP1ANALY	Analyzers	VOC	0.03	0.13
OP1PV38055	Analyzer Vent	VOC	0.08	0.35
38E3501A	OP-1 Analyzer	VOC	0.01	0.01

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
H_2S - hydrogen sulfide
NH_3 - ammonia
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) These emission rates include routine (non-MSS) and MSS operations.
(7) The maximum annual operating schedule for EPN OP1EN1 is 4,500 hrs/yr.

Date: TBD

lyondellbasell

November 8, 2019

Certified Mail #7016 0600 0000 3199 4419
EPERMITS 327950

Air Permits Review Division
Air Permits Initial Review Team - MC 161
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: Equistar Chemicals, LP - Channelview Chemical Complex
TCEQ Air Quality Permits No. 1768
Permit Amendment Application
Channelview, Texas Harris County
TCEQ Account ID No. HG-0033-B; RN100542281; CN600124705

Equistar Chemicals, LP (Equistar) operates an Olefins (OP1) Unit under Texas Commission on Environmental Quality (TCEQ) Air Quality Permit No. 1768. Equistar requests the amendment of this permit to update emissions from the Unit Flare.

A hard copy with the original signature of the NSR Workbook General sheet, as well, as, copies of the supporting documentation submitted through STEERS is included in this document. Required TCEQ Forms in the NSR Workbook and air dispersion modeling documentation in the EMEW Workbook have been submitted electronically. Relevant documents including emissions details, process description, flow diagrams, BACT and/or LAER analysis, area map, plot plan are included in this application submittal to assist in TCEQ's review. Equistar is requesting this application review be expedited and is sending the Surcharge Form under separate cover letter to the Cashier's Office. The amendment application fees are sent via wire transfer. If you have any questions regarding this application submittal, please contact Teresa Peneguy at (281) 452-8330.

Sincerely,

Tom Warnement
Environmental Team Leader – Air

Enclosure
cc: Director
Harris County Pollution Control Services
101 South Richey, Suite H
Pasadena, TX 77506
Certified Mail #7016 0600 0000 3199 4402

TCEQ Region 12
~~submitted via STEERS~~
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a LyondellBasell company

NEW SOURCE REVIEW PERMIT AMENDMENT APPLICATION

Permit No. 1768

Submitted by:

Equistar Chemicals, L.P. - Channelview

TCEQ Account Number HG-0033-B

Submitted to:

Texas Commission on Environmental Quality (TCEQ)
Air Permits Initial Review Team (APIRT)
Air Permits Division, MC-161
P.O. Box 13087
Austin, Texas 78711-3087

November 2019

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SECTION 1
INTRODUCTION

Equistar Chemicals, L.P. (Equistar) operates a Olefins Production (OP1) Unit under Texas Commission on Environmental Quality (TCEQ) Air Quality Permit No. 1768.

1.1 Purpose

Equistar requests the amend Air Quality Permit No. 1768, and is submitting this application as required under 30 TAC 116.111. Equistar is modifying the operation of the existing flare to meet future regulatory requirements. Additional natural gas is required to meet the anticipated operating limit to maintain a net heating value of the flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf). The site anticipates future requirements for the combustion zone that match the limits currently identified in 40 CFR 63 Subpart CC. No changes to the operation of the process unit or process vent controlled by the flare are being made with this project. All increases of volatile organic compounds (VOC) emissions will result from the minimal non-methane and non-ethane organics present in the imported natural gas supply. Additionally, the application identifies the sulfur dioxide (SO2) increases resulting from the minimal sulfur present in the natural gas. The combustion products oxides of nitrogen (NOx) and carbon monoxide (CO) that will be generated from the combustion of the additional natural gas are included in the emissions calculations.

The calculations and representations used in this permit amendment are based on best available estimates and should not be considered absolute values for all operating scenarios.

1.2 Permit History

Equistar currently operates the OP1 Unit at their Channelview, Texas manufacturing complex under TCEQ Air Permit No. 1768.

The permit was initially issued in September 1979 for the unit. The permit was last renewed on December 28, 2018.

1.3 Facility Information

The project described in this application includes emissions related to the Olefins 1 Production unit at the Equistar Channelview Facility. The regulated entity number for the facility is RN100542281. The Channelview Facility includes multiple process units; however, only the OP1 Unit is affected by this amendment. The Equistar Channelview Facility is located on Sheldon Road, Channelview, TX. All units operate under a single Federal Operating Permit, Permit No. O1426.

Figure 1.1 shows the location of the Channelview Facility on the Area Map. A detailed plot plan of the Facility showing the estimated locations of emissions units at the site is also provided in Figure 1.2.

1.4 PSD and Non-attainment Review

The Prevention of Significant Deterioration (PSD) regulations define a "major modification" as a physical change or a change in the method of operation of a major stationary source that would result in a significant emissions increase and a contemporaneous significant net emissions increase of any regulated pollutant. The project is not a major modification and is not subject to PSD or Non-attainment review for VOC, Carbon Monoxide CO, or Green House Gases (GHG). The project is a major modification for NOx and the associated Table 2F is included in Appendix A.

Table 1-1 PSD and NNSR Review

Contaminants	Emissions Increases	PSD Applicability		Non- Attainment Applicability	
		Limit	Netting?	Limit	Netting?
VOC	4.30	40	No	5	No
SO2	5.59	40	No		
CO	99.79	100	No		
NOx	19.37	40	No	5	Yes

1.5 Application Contents

Key components of this application are organized as follows:

- An area map and a plot plan are provided at the end of Section 1.
- A process description and process flow diagram are included in Section 2.
- Emissions calculations methodologies are included in Section 3.
- Best Available Control Technology (BACT) and Lowest Achievable Emissions Limit (LAER) are addressed in Section 4.
- Regulatory applicability and compliance strategies are addressed in Section 5.
- Appendix A contains completed TCEQ administrative forms, PI-1 signature page from the NSR Workbook and the Expedited Permit Request Form APD-EXP
- Appendix B contains TCEQ Table 2F Project Emissions Increases.
- Appendix C contains emission rate calculations for all Emissions Points.
- Appendix D contains the TCEQ approval letter for the Registered PBRs.

Figure 1-1
Area Map

Figure 1-1 Area Map
Equistar Chemicals, L.P. - Channelview

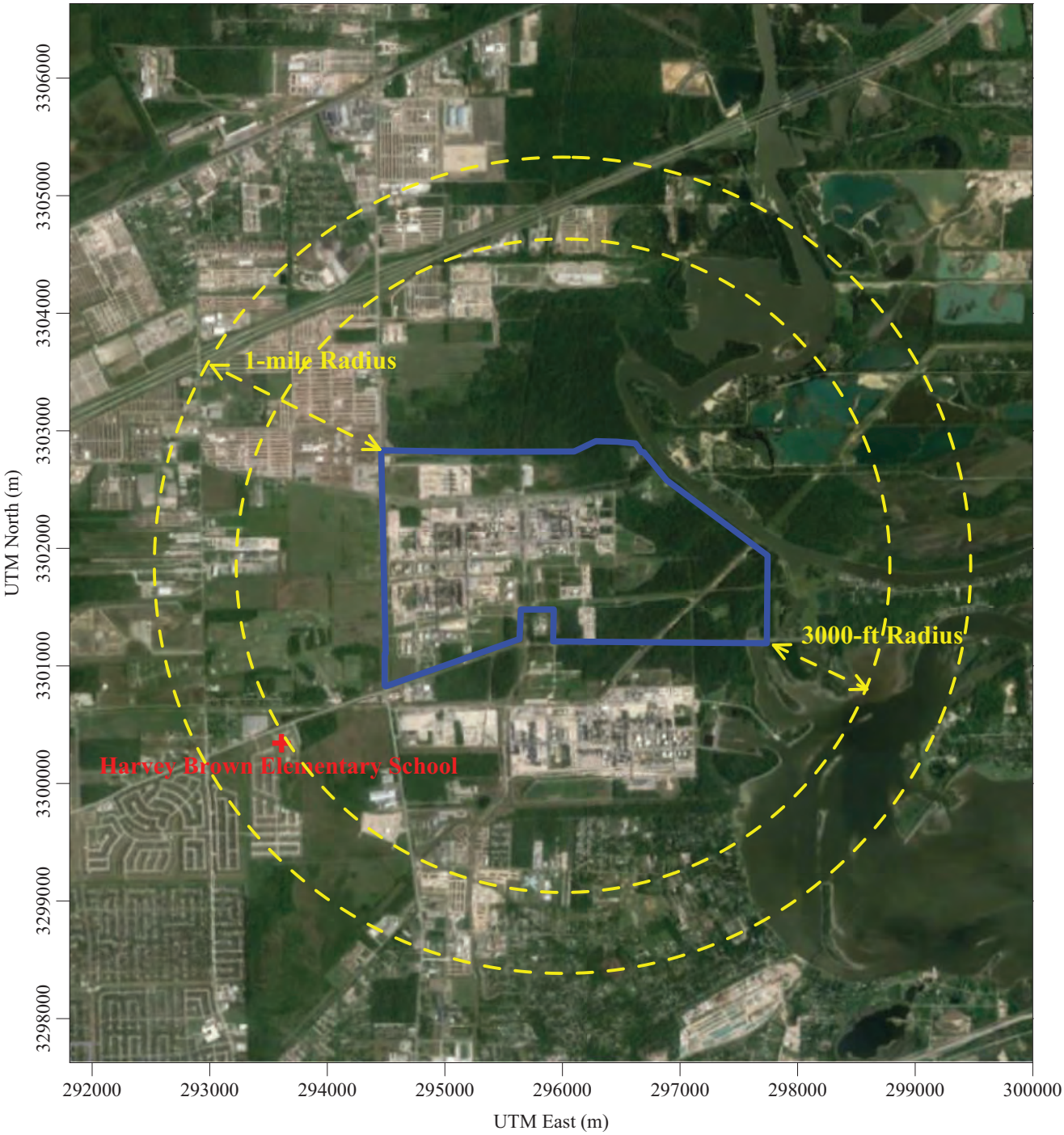
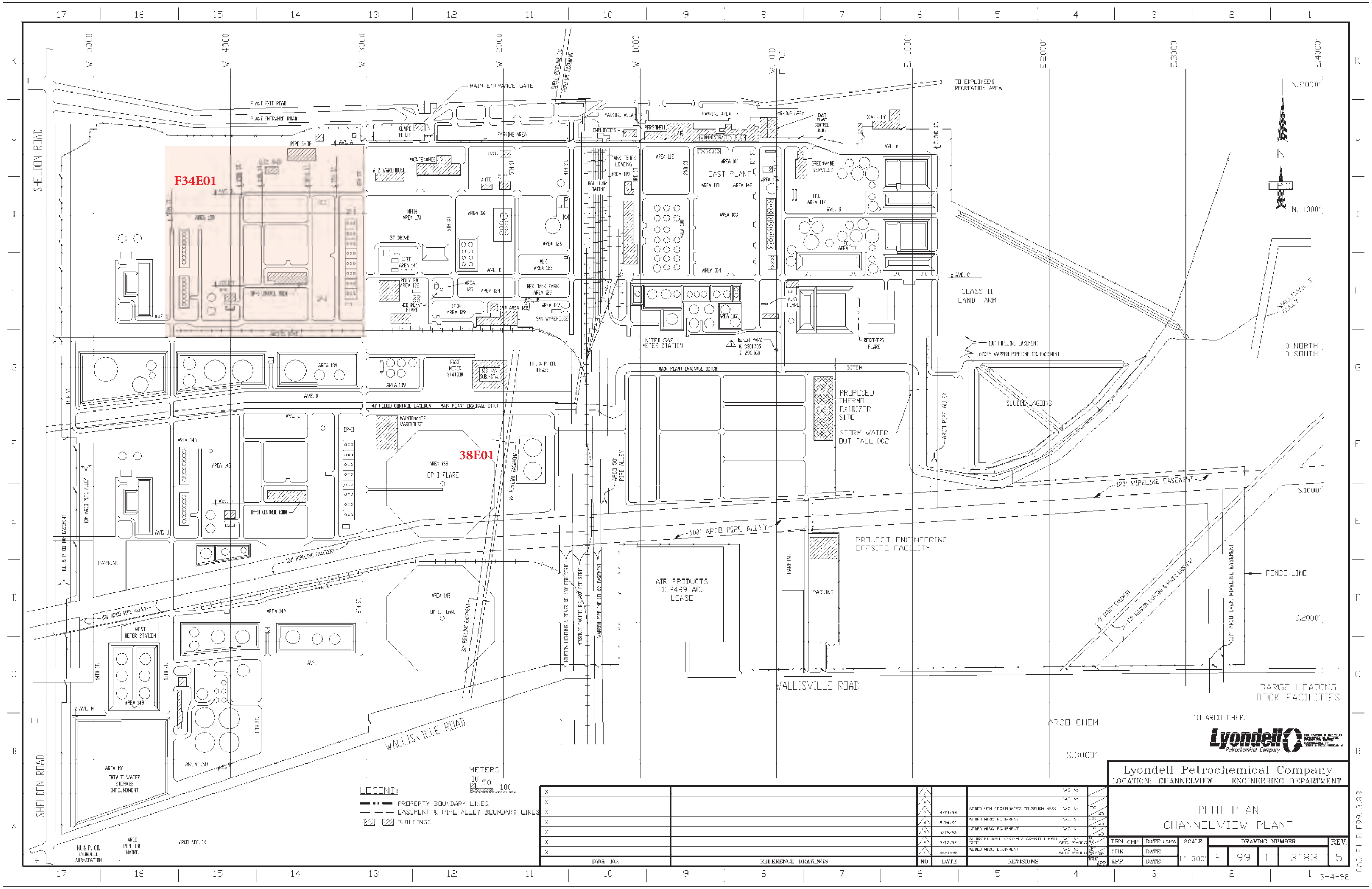


Figure 1-2
Plot Plan



F34E01
38E01
MAIN ENTRANCE GATE
EAST EXIT ROAD
EAST ENTRANCE ROAD
SHELDON ROAD
PARKING AREA
SAFETY
TO EMPLOYEE'S RECREATION AREA
EAST PLANT
CLASS II LAND FARM
WALLISVILLE GULLY
PROPOSED THERMAL OXIDIZER SITE
STORM WATER OUT FALL 002
SLUDGE PONDS
MAIN PLANT DRAINAGE DITCH
UNITED GAS METER STATION
OP-I FLARE
OP-II FLARE
AREA 138
AREA 148
AREA 149
AREA 150
100' ARCO PIPE ALLEY
150' PIPELINE EASEMENT
120' PIPELINE EASEMENT
PROJECT ENGINEERING OFFSITE FACILITY
AIR PRODUCTS 11.2489 AC. LEASE
PARKING
WALLISVILLE ROAD
FENCE LINE
BARGE LOADING DOCK FACILITIES
TO ARCO CHEM.
ARCO CHEM
WEST METER STATION
AREA 130 INTAKE WATER STORAGE IMPOUNDMENT
N.2000'
N.1000'
0 NORTH
0 SOUTH
S.1000'
S.2000'
S.3000'
W.5000
W.4000
W.3000
W.2000
W.1000
E.1000'
E.2000'
E.3000'
E.4000'
N
METERS
10 50 100
LEGEND:
PROPERTY BOUNDARY LINES
EASEMENT & PIPE ALLEY BOUNDARY LINES
BUILDINGS
DWG. NO.
REFERENCE DRAWINGS
NO.
DATE
REVISIONS
Lyondell
Lyondell Petrochemical Company
LOCATION: CHANNELVIEW
ENGINEERING DEPARTMENT
PLOT PLAN
CHANNELVIEW PLANT
SCALE
DRAWING NUMBER
REV.
E 99 L 3183
5


Bldg 1 WH
Bldg 2
Olefins 1 Flare 38E01
TK-51
TK-51
Google earth
© 2019 Google
N
400 ft

SECTION 2
PROCESS DESCRIPTION

2.1 Process Description

The OP1 Unit consists of cracking furnaces, where pyrolysis (cracking by heat) occurs, fractionation equipment to separate and purify the raw products, catalytic reactors to convert some by-products, heat exchangers to control process temperatures and provide energy efficiency, liquid pumps and gaseous compressors. Additionally, there is utility equipment to support utilities to the olefins process operations.

Cracking & Quench (C&Q) is the front-end of the unit where feedstock is cracked into smaller chain molecules, and initial fractions are produced. The cracking furnaces (EPNs: 34HTHRTRS, EF3419) accommodate a variety of feed stocks. Liquid feeds to the cracking furnaces are generally pumped into tankage (EPNs: 39E01 – 39E07) and then routed to the cracking furnaces. Natural gas liquids can be fed directly to the furnaces from pipelines. The effluent from the cracking furnaces is directed through heat exchangers to halt the reactions and recovery energy. The stream, generally referred to as cracked gas, is then directed to the compression and fractionation step.

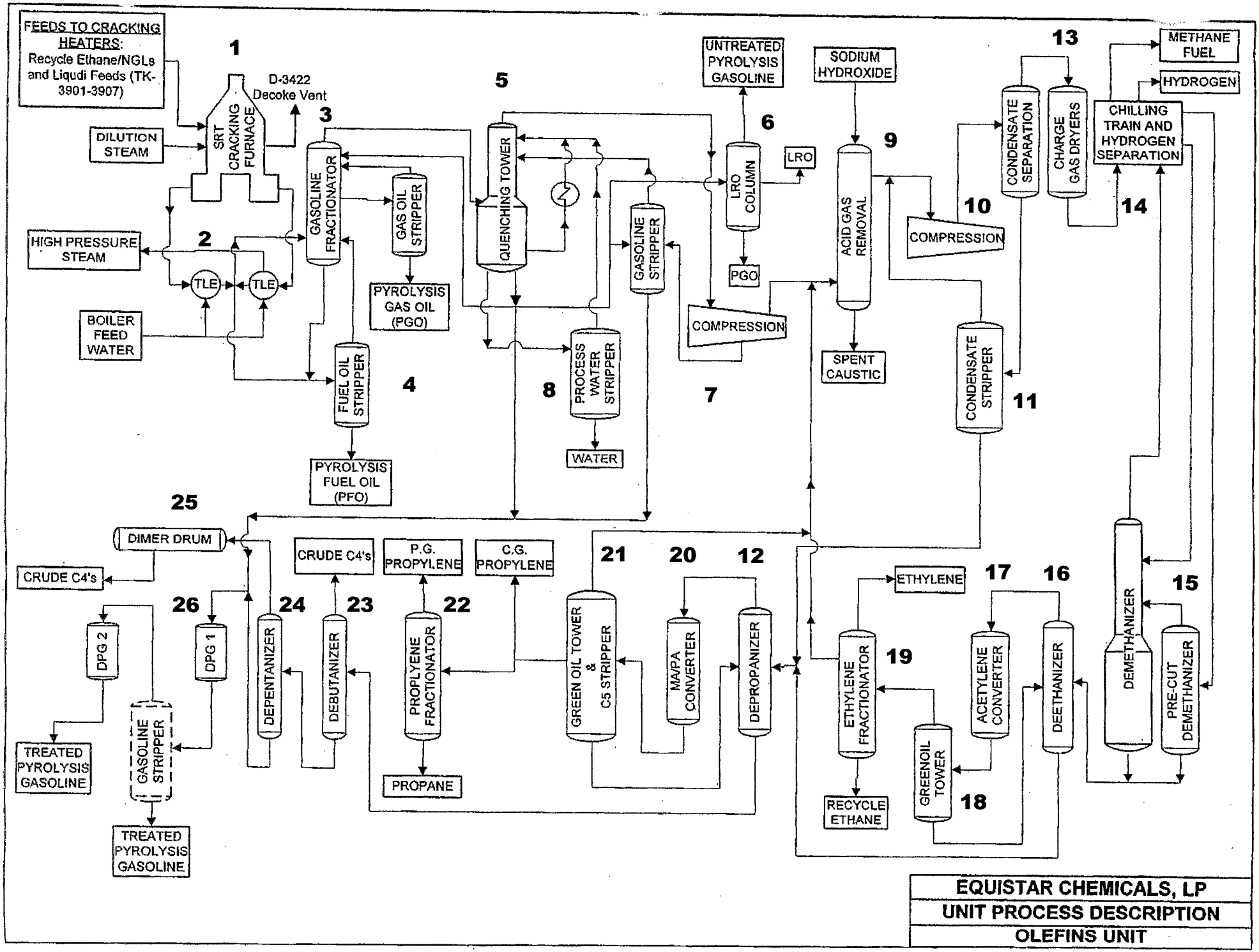
The cracked gas then goes through a series of compression and fractionation steps where the primary products, ethylene and propylene are separated from the by-products. The by-products are also fractionated into several different by-product streams, such as ethane, propane, C4 products, C5 products, pyrolysis fuel oil, pyrolysis gasoline and other higher carbon hydrocarbons. Methane and hydrogen removed from the cracked gas is used as fuel gas for the fired sources within the unit. Acetylene in the cracked gas is converted to ethylene and ethane in the Acetylene converters and methyl acetylene/propadiene (MAPD) in the cracked gas is converted to propylene and propane in the MAPD converters.

The DPG equipment processes pyrolysis gasoline feed. In the DPG equipment, the di-olefins are converted to mono-olefins. The effluent from these reactors is sent to other units at the site for further fractionated into light and heavy gasoline fractions.

The Acetylene, MAPD and DPG converters are regenerated through a common stack (The converters (EPN: 34E10) are regenerated using the Regen Heater (EPN: 37E03).

Process water is used as steam within the unit (EPNs: 34PVD3420 and 34FUGSTM). Purchased steam is also used within the unit and superheated using the Superheaters (F380001 A/B). Cooling water is supplied by a closed look system between the Cooling Tower (EPN: 38E11) and heat exchangers.

Figure 2-1
OP1 Unit Process Flow Diagram


FEEDS TO CRACKING HEATERS: Recycle Ethane/NGLs and Liquid Feeds (TK-3901-3907)
1
D-3422 Decoke Vent
SRT CRACKING FURNACE
DILUTION STEAM
HIGH PRESSURE STEAM
2
TLE
TLE
BOILER FEED WATER
3
GASOLINE FRACTIONATOR
GAS OIL STRIPPER
PYROLYSIS GAS OIL (PGO)
FUEL OIL STRIPPER
4
PYROLYSIS FUEL OIL (PFO)
5
QUENCHING TOWER
GASOLINE STRIPPER
8
PROCESS WATER STRIPPER
WATER
UNTREATED PYROLYSIS GASOLINE
6
LRO COLUMN
LRO
PGO
7
COMPRESSION
SODIUM HYDROXIDE
9
ACID GAS REMOVAL
SPENT CAUSTIC
10
COMPRESSION
13
CONDENSATE SEPARATION
CHARGE GAS DRYERS
14
METHANE FUEL
HYDROGEN
CHILLING TRAIN AND HYDROGEN SEPARATION
CONDENSATE STRIPPER
11
25
DIMER DRUM
CRUDE C4's
26
DPG 2
DPG 1
TREATED PYROLYSIS GASOLINE
GASOLINE STRIPPER
TREATED PYROLYSIS GASOLINE
24
DEPENTANIZER
CRUDE C4's
23
DEBUTANIZER
P.G. PROPYLENE
C.G. PROPYLENE
22
PROPYLENE FRACTIONATOR
PROPANE
21
GREEN OIL TOWER & C5 STRIPPER
20
MA/PA CONVERTER
12
DEPROPANIZER
ETHYLENE
17
ACETYLENE CONVERTER
16
DEETHANIZER
15
DEMETHANIZER
PRE-CUT DEMETHANIZER
ETHYLENE FRACTIONATOR
19
RECYCLE ETHANE
GREENOIL TOWER
18
EQUISTAR CHEMICALS, LP
UNIT PROCESS DESCRIPTION
OLEFINS UNIT

SECTION 3
EMISSION CALCULATION METHODOLOGY

This section describes the methodology used to calculate Potential-to-Emit (PTE) emissions from the sources affected by this project using BACT level controls. Emissions calculations are being provided electronically per TCEQ guidance.

3.1 Flare Emissions

The VOC emissions are estimated based on natural gas flow and the emission factor in EPA AP-42 for the combustion of natural gas. The flare is designed to ensure that the flares maintain compliance with NSR Permit No. 1768 and with applicable NSPS and State regulations when in use. NOx and CO emissions are estimated using emissions factors provided in TCEQ publication RG-360A/11, Appendix A: Technical Supplement, Table A-6, "Air Permit Flare Emissions Factors," revised February 2012. The unit operates a steam-assist flare to control vents from the process unit.

3.2 Fugitive Emissions

The TCEQ 28VHP & 28LAER fugitive emissions monitoring programs are used to control fugitive emissions from the OP1 Unit. The fugitive emissions from equipment included in the PBR being incorporated with this application have been estimated using the 28VHP program control efficiencies. Additionally, a control efficiency of 75% is used for connectors that are monitored annually, and a control efficiency of 97% is used for connectors that are monitored quarterly. The affected process unit contains streams various concentration of ethylene, therefore SOCMI without ethylene factors, SOCMI with ethylene factors, and SOCMI average ethylene factors were used in the fugitive emission estimation calculations. Emissions were calculated per the TCEQ "Technical Guidance Package for Chemical Sources: Equipment Leak Fugitives", issued October 2000.

3.3 Heater Emissions

The project authorized via standard permit being incorporated with this application did not change the fuel source or speciation. The project only lowered the rated heat duty of the heater through burner changes.

The estimated Carbon Monoxide (CO) emissions are the sum of the CO generated from combustion reaction and uncombusted CO within the fuel stream. The CO and NOx emissions from the combustion are calculated based on AP-42 factors for Large Wall-Fired Boilers (firing rate > 100 MMBtu/hr) listed under Section 1.4, "Natural Gas Combustion", Table 1.4-1 Emission Factors for Nitrogen Oxides (NOx) and Carbon Monoxide (CO) from Natural Gas Combustion. The CO within the fuel stream is calculated based on weight percentage obtained from sampling of the fuel gas. Other factors used to calculate emissions are molecular weight, firing rate, fuel net heating value, and number of hours in service.

The estimated SO2, PM, and VOC emissions are based on AP-42 factors listed under Section 1.4, “Natural Gas Combustion”, Table 1.4-2 Emission Factors for Criteria Pollutants and Greenhouse Gases from Natural Gas Combustion. Other factors used to calculate emissions are firing rate, fuel net heating value, and number of hours in service.

3.4 Engine Emissions

Engine emissions are calculated based on manufacturers' and tests' data. The guaranteed maximum emission rate limit in grams of pollutant per brake horsepower hour (g/bhp-hr) and the total hours of operation are used to calculate the emissions. Equation is derived from TCEQ Air Permit Division Document, “New Source Review (NSR) Emission Calculations”.

SECTION 4
BEST AVAILABLE CONTROL TECHNOLOGY AND LOWEST ACHIEVABLE EMISSION REDUCTION

In accordance with 30 TAC Chapter 116, §116.111(a)(2)(C), any new or modified facility must utilize BACT, with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility. Below is a BACT and LAER evaluation of the OP1 Unit projects that were a modification per 30 TAC 101.

4.1 Fugitives

The unit complies with the 28VHP program for the fugitive components. 28VHP meets the requirements for BACT.

4.2 Flare

The flare meets at least 98% destruction efficiency (DRE) for organic compounds and 99% DRE for organic compounds with 3 carbon or less, which meets BACT. The emission factors for NOx and CO emissions from a steam-assisted flare were used and meet BACT for CO and LAER for NOx. The EPA RACT/BACT/LAER Clearinghouse identified LAER for NOx to be operating flare with good combustion practices in compliance with 40 CFR 60.18 and/or 40 CFR 63.11. The TCEQ published 0.068 lb/MMBtu NOx factor for low BTU steam-assisted flares was the lowest reported emission factor for an elevated flare during the last 10 years. A copy of the results of the Clearinghouse search is attached.

SECTION 5
REGULATORY APPLICABILITY

Pursuant to TCEQ 30 TAC §116.111, Equistar will meet all rules and regulations of the TCEQ and the intent of the TCAA for the emission sources and activities addressed in this permit amendment application, as follows:

- §116.111(a)(1) – A completed Form PI-1 has been signed by an authorized representative of Equistar and is included in Appendix A.
- §116.111(a)(2)(A) through (L) – These items are addressed individually below.
- §116.111(b) – Equistar will comply with applicable 30 TAC 39 and 30 TAC 55 public notice and public participation requirements for this permit amendment application.

5.1 General Application Requirements - §116.111

The emissions associated with the proposed OP1 Unit project will comply with all applicable air quality rules and regulations and with the intent of the TCAA, including protection of the health and the physical property of people, as required by §116.111(a)(2)(A)(i). Following is a summary of rules and regulations as they apply to the proposed project:

30 TAC 101 - General Rules: The facility will be operated in accordance with the General Rules relating to circumvention, nuisance, traffic hazard, notification requirements for major upset, notification requirements for unplanned maintenance, sampling, sampling ports, emission inventory requirements, sampling procedures and terminology, compliance with Environmental Protection Agency (EPA) Standards, emissions fees, and all other applicable General Rules.

30 TAC 111 - Visible Emissions and Particulate Matter: Equistar will comply with all applicable requirements under this chapter.

30 TAC 112 - Sulfur Compounds: Equistar will comply with all applicable requirements under this chapter.

30 TAC 113 - Toxic Materials: TCEQ has incorporated MACT standards (40 CFR 63) into Chapter 113 by reference. The proposed facility will comply with all applicable provisions of Chapter 113 concerning control, recordkeeping, reporting, and monitoring requirements.

30 TAC 114 - Motor Vehicles: This provision of the rule controls the emissions from motor vehicles and does not apply to the facilities under consideration in this permit application.

30 TAC 115 - Volatile Organic Compounds: The proposed facility is located in Harris County and is regulated by the following Rules that are applicable to this permit application:

Subchapter B Division 2 – Vent Gas Control

Equistar will comply with all the applicable control, monitoring, testing, and recordkeeping requirements listed in this subchapter.

Subchapter D Division 3 - Fugitive Emission Control in Petrochemical Process in Ozone Nonattainment Areas

Equistar will comply with all the applicable control, monitoring, inspection, and recordkeeping requirements listed in this subchapter

30 TAC 116 - Permits for New Construction or Modification: Equistar is complying with the requirements of Chapter 116 by submitting this permit application and as outlined below for each of the following sections:

Rule 116.111(a)(2)(A) Protection of public health and welfare

As outlined below, the emissions from Equistar will comply with all air quality rules and regulations and with the intent of the TCAA, including protection of the health and physical property of the people.

Rule 116.111(a)(2)(B) Measurement of Emissions

The proposed facility will have provisions for measuring the emission of significant air contaminants as determined by the Executive Director.

Rule 116.111(a)(2)(C) Best Available Control Technology (BACT)

Section 4 of this application presents a discussion of BACT for the modified facilities associated with this application.

Rule 116.111(a)(2)(D) Federal New Source Performance Standards (NSPS)

Equistar will comply with all applicable 40 CFR Part 60 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(E) National Emission Standards for HAPs (NESHAP)

Equistar will comply with all applicable 40 CFR Part 61 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(F) Maximum Achievable Control Technology (MACT)

Equistar will comply with all applicable 40 CFR Part 63 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(G) Performance Demonstration

The proposed facilities are expected to perform as represented in this application.

Rule 116.111(a)(2)(H) Nonattainment Review

The facility is located in a nonattainment area for VOC and NO_x. See Section 1.4, PSD and Non-attainment Review, for details.

Rule 116.111(a)(2)(I) Prevention of Significant Deterioration (PSD) review

The facility is located in an attainment area for SO2, PM10, CO, and lead.

See Section 1.4, PSD and Non-attainment Review, for details.

Rule 116.111(a)(2)(J) Air Dispersion Modeling

Air dispersion modeling is being submitted with this application.

Rule 116.111(a)(2)(K) Hazardous Air Pollutants

Equistar will comply with all applicable requirements under Subchapter E of this chapter.

Rule 116. 111(a)(2)(L) Mass Cap and Trade Allowances

Equistar Channelview Facility is located in the Houston/Galveston/Brazoria area. Equistar has sufficient NOx allowances to demonstrate compliance with the mass emissions cap and trade program.

30 TAC 117 - Nitrogen Compounds: The provision of the rule does not apply to the proposed facilities considered in this permit application.

30 TAC 118 - Air Pollution Episodes: The facility will be operated in compliance with the rules relating to generalize a localized air pollution episode. An Emissions Reduction Plan is maintained as required by §118.5.

30 TAC 122 - Federal Operating Permits: The Channelview Facility operates under Federal Operating Permit No. O1426. The Title V Permit will be revised to reference the changes in applicable requirements resulting from the amendment to the NSR permit.

APPENDIX A
ADMINISTRATIVE CONSIDERATIONS AND APPLICATION FORMS

Permit Fee Calculation

The amendment application fee is calculated according to 30 TAC §116.141(a), Determination of Fees, which specifies that the fee for an amendment is based on the capital cost of the project. The permit application fee is calculated and summarized on the TCEQ Table 30 included in the NSR Workbook.

The permit amendment fee of $3,000 is provided with this application. The fee payment tracer number for the total amount including both fees is included in this appendix.

Compliance History

Equistar is an existing site greater than 5-years old. Equistar requests that TCEQ compile the history of the site.

Administratively Application Forms

The administrative information has been completed in the NSR Workbook and sent electronically to the Air Permit Initial Review Team. Additional the project EMEW for SCREEN workbook containing the modeling review information has been provided electronically.

Texas Commission on Environmental Quality
Form PI-1 General Application
General

Date: 10/01/2019
Permit #: 1768
Company: Equistar

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Equistar Chemicals, LP

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Kim
Last Name:	Foley
Title:	Site Manager
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-862-5150
Fax Number:	
Email Address:	kim.foley@lyb.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting
Company or Legal Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77503
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	600124705

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	100542281

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: https://www.tceq.texas.gov/agency/financial/fees/delin	No

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Amendment	1768
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Not applicable	
Nonattainment: *Not applicable, Initial, Major Modification*	Major Modification	N142
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Not applicable	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	Combination (list below)
List the permit number, registration number, and/or PBR number.	83799, 106.263

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No

Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference. At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo:

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	Yes
If yes, list any PBR, standard exemptions, or standard permits that need to be consolidated:	157688, 157139, 156142
If yes, are emission calculations, BACT analysis, and an impacts analysis included for each authorization to be consolidated? **If any required information is not provided, the authorization will be incorporated by reference.**	Yes

E. Associated Federal Operating Permits

Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	Yes
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1426

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Harris
TCEQ Region	Region 12
County attainment status as of Sept. 23, 2019	Serious Ozone nonattainment
Street Address:	8280 Sheldon Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Channelview
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	77530
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	029:49:56
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	095:06:43
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Channelview Facility
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	Olefins Unit

Are there any schools located within 3,000 feet of the site boundary?	Yes

C. Portable Facility

Permanent or portable facility?	Permanent

D. Industry Type

Principal Company Product/Business:	SOCMI Chemicals

A list of SIC codes can be found at:
https://www.naics.com/sic-codes-industry-drilldown/

Principal SIC code:	2869

NAICS codes and conversions between NAICS and SIC Codes are available at:
https://www.census.gov/eos/www/naics/

Principal NAICS code:	325199

E. State Senator and Representative for this site

This information can be found at (note, the website is not compatible to Internet Explorer):
https://wrm.capitol.texas.gov/

State Senator:	John Whitmire
District:	15
State Representative:	Ana Hernandez
District:	143

V. Project Information

A. Description

Provide a brief description of the project that is requested. (Limited to 500 characters).	Natural gas is being added to flare to meet furture regulatory flame zone heat value requirements for flares.

B. Project Timing

Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).

Projected Start of Construction:	TBD
Projected Start of Operation:	TBD

C. Enforcement Projects

Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No

D. Operating Schedule

Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials

All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)

A. Confidential Application Materials

Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached?	No
https://www.tceq.texas.gov/assets/public/permitting/centralregistry/10400.docx	
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. You do not need to submit calculations for sources which are not changing emission rates with this project. Please note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review. It can be emailed with the submittal of this application workbook.	N/A
H. Is a material balance (Table 2, Form 10155) attached?	Yes

Texas Commission on Environmental Quality
Form PI-1 General Application
General

Date: 10/01/2019
Permit #: 1768
Company: Equistar

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Equistar Chemicals, LP

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Kim
Last Name:	Foley
Title:	Site Manager
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-862-5150
Fax Number:	
Email Address:	kim.foley@lyb.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting
Company or Legal Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77503
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	600124705

I. Is a list of MSS activities attached?	N/A
J. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
K. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Kim Foley
Signature:	Kim Foley
	Original signature is required.
Date:	11/12/19

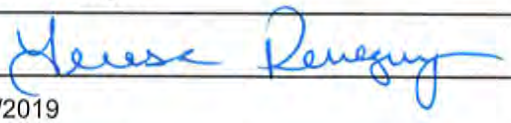
Basis2 Receipt Report by Endorsement Number

NOV-18-19 04:37 PM

Acct. #: PAF **Account Name:** PERMIT AMENDMENT FEES (AIR)

Paid For	Endors. #	Ref #2	Paid In By	PayTyp	Chk #	Card#	Bank Slip	Tran.Date	Receipt Amnt.
OLEFINS 1	WRS0019806	1768	LYO EQUISTAR CHE	WT	WIRE		BS00076778	18-NOV-19	$3000.00

Form APD-EXP Expedited Permitting Request

I. Contact Information	
Company or Other Legal Customer Name: Equistar Chemicals, LP	
Customer Reference Number (CN): 600124705	
Regulated Entity Number (RN): 100542281	
Company Official or Technical Contact Name: Teresa Peneguy	
Phone Number: 281-452-8330	
Email: teresa.peneguy@lyb.com	
II. Project Information	
Facility Type: Channelview Facility, OP1 Unit	
Permit Number: 1768	
Project Number: TBD	
III. Economic Justification	
The purpose of the application associated with this request to expedite will benefit the economy of this state or an area of this state.	☒ YES ☐ NO
IV. Delinquent Fees and Penalties	
Applications will not be expedited if any delinquent fees and/or penalties are owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/delin/index.html.	
V. Signature	
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. As the applicant, I commit to fulfilling all expectations of the expedited permitting program and application requirements promptly. Failure to meet any expectation or requirement may cause my application to be removed from the expedited permitting program and possibly voided at the discretion of the TCEQ Executive Director. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.	
Name: Teresa Peneguy	
Signature: 	
Date: 11/8/2019	

Reset Form

Basis2 Receipt Report by Endorsement Number

NOV-18-19 04:36 PM

Acct. #: APS **Account Name:** AIR PERMIT EXPEDITED FEE

Paid For	Endors. #	Ref #2	Paid In By	PayTyp	Chk #	Card#	Bank Slip	Tran.Date	Receipt Amnt.
1768/OLEFINS 1	WRS0019799		LYO EQUISTAR CHE	WT	WIRE		BS00076778	18-NOV-19	$20000.00

APPENDIX B
TECHNICAL APPLICATION TABLES

Technical Application Tables

The following table is included in this appendix:

Table 2F – Project Increases

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	Nox	Permit:	1768
Baseline Period:	N/A new stream	to	

	Affected or Modified Facilities[2]		Permit No.	Actual Emissions[3]	Baseline Emissions[4]	Proposed Emissions[5]	Project Actual Emissions	Difference (B-A)[6]	Correction[7]	Project Increase[8]
	FIN	EPN								
1.	38E01	38E01	1768	0	0	19.37	19.37	19.37		19.37
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
								Page Subtotal[9]		19.37

[1] Individual Table 2F=s should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

APPENDIX C
EMISSION CALCULATIONS

Included in this appendix is the emissions calculations for the additional natural gas to the flare. The fugitive emissions calculations associated with the PBR being incorporated with this permit amendment are also included.

Flare Emissions
Natural Gas addition

Emission Factors

NOx	0.068	lb/MMBtu	TCEQ EI Guidance for Steam-assist flare
CO	0.3503	lb/MMBtu	TCEQ EI Guidance for Steam-assist flare
SO2	5	gr/100 dscf	vendor spec
	2.5	gr/100 dscf	historically used factor
VOC	5.5	lb/MMscf	AP-42 Natural Gas Combustion
	1020	Btu/scf	

EPN: 38E01

Avg Natural Gas	178,618	scfh
Max Natural Gas	240,000	scfh

Max Hourly	Current Auth	Nat Gas Increase	Total
	lb/hr	lb/hr	lb/hr
NOx	104.3	16.65	120.95
CO	537.25	85.75	623
SO2	-	3.43	-
VOC	1375.9	1.32	1377.22

Annual	Current Auth	Nat Gas Increase	Total
	tpy	tpy	tpy
NOx	16.3	19.37	35.67
CO	81.36	99.79	181.15
SO2	3.8	5.59	9.39
VOC	49.15	4.3	53.45

Sample Calculation
Hourly NOx

240,000 scf / hr	1020 Btu / scf	MMBtu / 10^6 Btu	0.068 lb / MMBtu	=	16.65 lb NOx / hr

Annual SO2

178,618 scf / hr	MMscf / 10^6 scf	2.5 gr / 100 dscf	lb S / 7000 gr	2 lb SO2 / lb S	8760 hr / yr	ton / 2000 lb	=	5.59 ton SO2 / hr

SO2 existing hourly convert to 5 S grain/ 100 dscf basis

current auth	5 gr
2.5 gr / 100 dscf	100 dscf

Unit	Permit before SP	Factor current	Current lb/	Current tp	Revised lb/hr	Revised tpy
OP1	1768	2.5 gr/100 dscf	10.80	3.80	21.60	3.80
Add Nat Gas		5 gr/100 dscf			3.43	5.59
			10.80	3.80	25.03	9.39

	lb/hr
Current Auth	10.80
Increase	14.23
Proposed Allowable	25.03

OP1 Fugitive (EPN F34E00) Emissions Summary

VOC Emissions Summary

	Total (lbs/hr)	Total (ton/year)
Total Emissions	1.09	4.76
VOC Percentage	100.00%	100.00%
Total VOC Emissions	1.09	4.76

Fugitives Estimated Emissions

Component Class	Chemical State	SOCMI Factor	Factor	Control Credit	Sum of Count	Emissions Estimate (lb/hr)	Emissions Estimate (tpy)
Connector	Gas / Vapor	SOCMI Average	0.0039	75%	23	0.02	0.10
Connector	Light Liquid	SOCMI Average	0.0005	75%	5	0.00	0.00
Connector	Gas / Vapor	SOCMI Average	0.0039	97%	121	0.01	0.06
Connector	Light Liquid	SOCMI Average	0.0005	97%	68	0.00	0.00
Other Component 1	Gas / Vapor	SOCMI Average	0.0132	75%	41	0.14	0.59
Other Component 1	Light Liquid	SOCMI Average	0.0089	75%	27	0.06	0.26
Valve	Gas / Vapor	SOCMI Average	0.0132	75%	16	0.05	0.23
Valve	Light Liquid	SOCMI Average	0.0089	75%	4	0.01	0.04
Valve	Gas / Vapor	SOCMI Average	0.0132	97%	46	0.02	0.08
Valve	Light Liquid	SOCMI Average	0.0089	97%	28	0.01	0.03
Connector	Gas / Vapor	SOCMI with Ethylene	0.0053	75%	2	0.00	0.01
Connector	Light Liquid	SOCMI with Ethylene	0.0052	75%	2	0.00	0.01
Connector	Gas / Vapor	SOCMI with Ethylene	0.0053	97%	11	0.00	0.01
Connector	Light Liquid	SOCMI with Ethylene	0.0052	97%	12	0.00	0.01
Other Component 1	Gas / Vapor	SOCMI with Ethylene	0.0258	75%	6	0.04	0.17
Other Component 1	Light Liquid	SOCMI with Ethylene	0.0459	75%	12	0.14	0.60
Valve	Gas / Vapor	SOCMI with Ethylene	0.0258	75%	1	0.01	0.03
Valve	Light Liquid	SOCMI with Ethylene	0.0459	75%	2	0.02	0.10
Valve	Gas / Vapor	SOCMI with Ethylene	0.0258	97%	7	0.01	0.02
Valve	Light Liquid	SOCMI with Ethylene	0.0459	97%	14	0.02	0.08
Connector	Gas / Vapor	SOCMI without Ethylene	0.0029	75%	87	0.06	0.28
Connector	Light Liquid	SOCMI without Ethylene	0.0005	75%	368	0.05	0.20
Connector	Gas / Vapor	SOCMI without Ethylene	0.0029	97%	86	0.01	0.03
Connector	Light Liquid	SOCMI without Ethylene	0.0005	97%	162	0.00	0.01
Other Component 1	Gas / Vapor	SOCMI without Ethylene	0.0089	30%	28	0.17	0.76
Other Component 1	Light Liquid	SOCMI without Ethylene	0.0035	30%	60	0.15	0.64
Valve	Gas / Vapor	SOCMI without Ethylene	0.0089	75%	14	0.03	0.14
Valve	Light Liquid	SOCMI without Ethylene	0.0035	75%	25	0.02	0.10
Valve	Gas / Vapor	SOCMI without Ethylene	0.0089	97%	55	0.01	0.06
Valve	Light Liquid	SOCMI without Ethylene	0.0035	97%	173	0.02	0.08
				Total	**1506**	**1.09**	**4.76**

Notes:
1. Emissions Factors come from "Emissions Factors for Equipment Leak Fugitive Components-Addendum to RG-360A, January 2008-Table 3. Average Emission Factors-SOCMI". Different SOCMI factors are used based on the concentration of ethylene in the streams.
2. Control efficiencies come from 28VHP "TCEQ – Control Efficiencies for TCEQ Leak Detection and Repair Programs Revised 07/11 (APDG 6129v2)"
3. A 97% control efficiency for connectors is used when monitoring at 500 ppm quarterly.
5. A 75% control efficency for connectors is used when monitoring 500 ppm annually.
5. DTM = Difficult to monitor. UTM = Unable to monitor. Control efficiencies assigned are based on monitoring type and frequency of monitoring.
6. Other 1 Components (caps, plugs, & other non-traditional components) calculated using factors according to TCEQ EI Guidance Appendix A Table A-6.
7. Fugitives emissions are an estimate only and should not be considered as a maximum allowable emission rate.

Sample Calculations

Hourly Emissions Valve GV

Hourly Estimated VOC Emission Rate (lb/hr) = (SOCMI w/o C_2)* Component Count * (1-Control Efficiency [%])

Hourly Controlled VOC Emission Rate for Gas/Vapor Annual =	0.009	55	(1- 0.97)		**0.01**
	hr				**hr**

Annual Emissions Connector GV

Annual Estimated VOC Emission Rate (tpy) = (SOCMI w/o C_2)* Component Count * (1-Control Efficiency [%]) * 8760 / 2000

Annual Estimated VOC Emission Rate for Gas/Vapor =	0.009	55	(1- 0.97)	8760	**0.06**
	hr			2000	**yr**

Fugitives Speciated Emissions

Chemical	WT%	Emissions (lb/hr)	Emissions (TPY)
1,3-butadiene	1.15%	0.01	0.05
1,3-Methylpentadiene	0.22%	0.00	0.01
1-Methylindene	0.98%	0.01	0.05
1-Methylnaphthalene	0.39%	0.00	0.02
1-N-Decylnaphthalene	1.45%	0.02	0.07
2-Butene	5.06%	0.05	0.24
2-ethyl-m-xylene	0.55%	0.01	0.03
2-methyl-1-butene	0.30%	0.00	0.01
2-methyl-3-butene	0.17%	0.00	0.01
2-Methylnaphthalene	3.33%	0.04	0.16
Benzene	2.66%	0.03	0.13
Butylenes	4.23%	0.05	0.20
cis-1,3-pentadiene	0.09%	0.00	0.00
cyclopentadiene	0.25%	0.00	0.01
cyclopentane	0.13%	0.00	0.01
cyclopentene	0.16%	0.00	0.01
DCPD	0.24%	0.00	0.01
Di-Methylsulfide	0.37%	0.00	0.02
Ethylene	21.19%	0.23	1.01
HEXANE	1.44%	0.02	0.07
HEXENE	0.56%	0.01	0.03
indene	0.59%	0.01	0.03
isobutane	0.30%	0.00	0.01
Isohexanes	0.30%	0.00	0.01
Isopentane	1.08%	0.01	0.05
Isoprene	0.10%	0.00	0.00
Methyl-Cyclo-Pentadienes	0.68%	0.01	0.03
Methyl-Cyclo-Pentene	0.08%	0.00	0.00
m-methyl-styrene	0.44%	0.00	0.02
naphthalene	5.56%	0.06	0.26
n-butane	4.15%	0.05	0.20
n-decane	1.03%	0.01	0.05
N-Heptane	0.60%	0.01	0.03
N-Octane	3.77%	0.04	0.18
Nonane	2.29%	0.02	0.11
n-pentane	4.40%	0.05	0.21
n-propyl benzene	0.80%	0.01	0.04
PENTENE	0.55%	0.01	0.03
Phenanthrene	0.18%	0.00	0.01
Propane	3.69%	0.04	0.18
PROPYLENE	19.72%	0.21	0.94
Styrene	0.57%	0.01	0.03
Toluene	2.67%	0.03	0.13
Xylene	1.52%	0.02	0.07

Components less than 0.01 % are excluded and considered impurities.
Non-VOCs including, but not limited to, methane, ethane, oxygen, or nitrogen may be present.
Representative worst case scenario identified, additional operating condition scenarios can occur.

Recycle Heater F-3701 (EPN: 37E03)
Fuel Gas Combustion Emissions

Pollutant	Emission Factor1	Emission Factor Units	Emission Factor Basis	Hourly Emissions lbs/hr	Annual Emissions TPY
NOx	0.10	lbs/MMBtu	AP-42	2.45	10.74
CO (comb)	84	lb/MMscf	AP-42	2.06	9.02
CO (fuel)	0.41	vol%		0.07	0.32
	99.0	% DRE			
Total CO				0.18	0.79
SO2	0.60	lb/MMscf	AP-42	0.19	0.82
PM, PM10, PM2.52	7.60	lb/MMscf	AP-42	0.13	0.55
Total VOC	5.50	lb/MMscf	AP-42	0.00	0.00

(1) Per AP-42 instructions, AP-42 based emissions corrected to fuel gas with 1020 Btu/Scf heat content.
footnote c. Therefore PM10 = PM2.5 emissions.

Heater		F3701
Operating Conditions		
Hourly Firing Rate:	MMBtu/Hr	25
Annual Firing Rate:	MMBtu/Hr	25
Fuel Net Heating Value:	Btu/scf	1,020
Potential Annual Run hours:	Hrs/Yr	8,760
Speciated VOC Emissions - Hourly		
ethylene	lb/hr	0.05
propane	lb/hr	0.01
propylene	lb/hr	0.03
1-butene	lb/hr	<0.01
1,3-BUTADIENE	lb/hr	<0.01
benzene	lb/hr	0.01
cis-2-BUTENE	lb/hr	0.01
ISOBUTENE	lb/hr	0.01
ISOBUTANE	lb/hr	<0.01
ISOPENTANE	lb/hr	<0.01
n-BUTANE	lb/hr	<0.01
trans-2-BUTENE	lb/hr	<0.01
Speciated VOC Emissions - Annual		
ethylene	tpy	0.20
propane	tpy	0.04
propylene	tpy	0.13
1-butene	tpy	0.02
1,3-BUTADIENE	tpy	<0.01
benzene	tpy	0.04
cis-2-BUTENE	tpy	0.02
ISOBUTENE	tpy	0.05
ISOBUTANE	tpy	0.02
ISOPENTANE	tpy	0.01
n-BUTANE	tpy	<0.01
trans-2-BUTENE	tpy	0.02

Components less than 0.01 % are excluded and considered impurities.
Non-VOCs including, but not limited to, methane, ethane, oxygen, or nitrogen may be present.
Representative worst case scenario identified, additional operating condition scenarios can occur.

Sample Emissions Calculations

NOx Hourly Emissions = Emission Factor * Firing Rate

$$\frac{0.10 \text{ lbs NOx}}{\text{MMBtu}} \times \frac{25 \text{ MMBtu}}{\text{hr}} = \frac{2.45 \text{ lbs NOx}}{\text{hr}}$$

NOx Annual Emissions = Emission Factor * Firing Rate * Hours of Operation * ton/lb conversion

$$\frac{0.10 \text{ lbs NOx}}{\text{MMBtu}} \times \frac{25 \text{ MMBtu}}{\text{hr}} \times \frac{\text{hrs}}{\text{yr}} \times \frac{\text{ton}}{2000 \text{ lbs}} = \frac{10.74 \text{ ton NOx}}{\text{yr}}$$

CO Hourly Emissions from Combustion = Emission Factor ÷ AP-42 Heat Value * (Actual to AP-42 HV) * Firing Rate

$$\frac{84.00 \text{ lbs CO}}{\text{MMscf}} \times \frac{\text{scf}}{1020 \text{ Btu}} \times \frac{1020 \text{ Btu/scf}}{1020 \text{ Btu/scf}} \times \frac{25 \text{ MMBtu}}{\text{hr}} = \frac{2.06 \text{ lbs CO}}{\text{hr}}$$

CO Hourly Emissions from Waste Gas = Concentration * Volumetric Flow / Molar Volume * Molecular Weight CO * (1-DRE)

$$0.41 \text{ vol\%} \times \frac{25 \text{ MMBtu}}{\text{hr}} \times \frac{106 \text{ Btu}}{\text{MMBtu}} \times \frac{\text{scf}}{1020 \text{ Btu}} \times \frac{\text{lbmol}}{385.46 \text{ scf}} \times \frac{28.01 \text{ lb CO}}{\text{lbmol CO}} \times (1 - 0.99) = \frac{9.02 \text{ lbs CO}}{\text{hr}}$$

CO Annual Emissions from Combustion = Emission Factor ÷ Heat Value * (Actual to AP-42 HV) * Firing Rate * Hours of Operation * ton/lb

$$\frac{84.00 \text{ lbs CO}}{\text{MMscf}} \times \frac{\text{scf}}{1020 \text{ Btu}} \times \frac{1020 \text{ Btu/scf}}{\text{hr}} \times \frac{25 \text{ MMBtu}}{\text{hr}} \times \frac{\text{hrs}}{\text{yr}} \times \frac{\text{ton}}{2000 \text{ lbs}} = \frac{0.07 \text{ ton CO}}{\text{yr}}$$

CO Annual Emissions from Waste Gas = Concentration * Volumetric Flow / Molar Volume * Molecular Weight CO * (1-DRE)

$$0.41 \text{ vol\%} \times \frac{25 \text{ MMBtu}}{\text{hr}} \times \frac{106 \text{ Btu}}{\text{MMBtu}} \times \frac{\text{scf}}{1020 \text{ Btu}} \times \frac{\text{lbmol}}{385.46 \text{ scf}} \times \frac{28.01 \text{ lb CO}}{\text{lbmol CO}} \times \frac{\text{hrs}}{\text{yr}} \times \frac{\text{ton}}{2000 \text{ lbs}} \times (1 - 0.99) = \frac{0.32 \text{ ton CO}}{\text{yr}}$$

Diesel Engine Emissions Calculations (EPN: OP1EN1)

Source Information:

Horsepower (hp)	525
Hours of Operation	4,500

Criteria Pollutant Emissions Calculations:

Pollutant	Emission Factor (lb/hp-hr)	Emission Factor (gram/kW-hr)	Emissions (lb/hr)	Emissions (TPY)
PM (10/2.5) 1 & 2	0.0000	0.02	0.02	0.04
VOC 1	0.0003	0.19	0.16	0.37
Nitrogen Oxides 1	0.0033	2.00	1.73	3.88
Sulfur Dioxide 3			0.01	0.01
Carbon Monoxide 1	0.0058	3.50	3.02	6.80

Example Calculations:

VOC Emissions (TPY)= 0.0003 lb/hp-hr * 525 hp * 4500 hr * 1/2000 tons/lb = 0.37 TPY

1 Emission factor is based on the EPA standard for Tier 4 engines. Units are in g/kW-hr 1 gram/kilowatt-hour = 0.001643986806

2 PM10 and PM2.5 are asssumed to be equal to PM emission rates which are based on vendor certification for Tier 4 engine.

3 Emissions for SO2 are based on the use of ultra low sulfur diesel fuel (15 ppmw sulfur content) and are calculated based on a 188 lb/hr

APPENDIX D
PBR AND STANDARD PERMIT APPROVAL LETTER

Included in this appendix is the TCEQ approval letters for the following Permit By Rules (PBR):

- PBR Authorization No. 159688 for Fugitive Components;
- PBR Authorization No. 157139 for replacement in kind Engine.

Included in this appendix is the TCEQ approval letter for the following Standard Permit (SP):

- Standard Permit Authorization No. 156142 for Heater F3701.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 29, 2019

Mr. Tom Warnement
Environmental Manager - Air
Equistar Chemicals, LP
PO BOX 777
Channelview, TX 77530

Permit by Rule Registration Number: 157688
Equistar Chemicals, LP
Project Description/Unit: Equistar Chemicals Channelview Complex
City: Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705
30 TAC § 106.261
30 TAC § 106.262
Affected Permit(s): 1768

This is in response to your Permit by Rule (PBR) registration submitted through the online ePermits process for your facility located near Channelview, Harris County. Based on the information submitted and review completed by the Rule Registration Section, this is an acknowledgement that Equistar Chemicals, LP has certified emissions associated with Equistar Chemicals Channelview Complex under the Permit By Rule(s) listed above. For rule information see: www.tceq.texas.gov/permitting/air/nav/numerical_index.html. Records must be maintained in accordance with Title 30 Texas Administrative Code § 106.8 to demonstrate compliance with the claimed PBRs.

As referenced in 30 TAC § 116.116(d)(2), all changes authorized under Chapter 106 to a permitted facility shall be incorporated into the NSR Permit No. 1768 when it is amended or renewed.

As a reminder, regardless of the authorization mechanism, all facilities must be in compliance and operate in accordance with all rules and regulations of the TCEQ and the U.S. Environmental Protection Agency. Facilities not operating in accordance with these rules and regulations, or that misrepresented or failed to fully disclose all relevant facts in obtaining this authorization may be subject to formal enforcement action.

This action is taken under authority delegated by the Executive Director of the TCEQ. If you need further information or have questions, please contact the Rule Registrations Section at (512) 239-1250 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Mark T. Meyer

Mark Meyer, Manager

Rule Registrations Section
Air Permits Division
Texas Commission on Environmental Quality

[Project Number: 304202]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 19, 2019

Mr. Tom Warnement
Environmental Manager - Air
Equistar Chemicals, LP
PO BOX 777
Channelview, TX 77530

Permit by Rule Registration Number: 157139
Equistar Chemicals, LP
Project Description/Unit: Equistar Chemicals Channelview Complex
City: Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705
30 TAC § 106.512 Effective Date: 06/13/2001
Affected Permit(s): 1768,49120

This is in response to your Permit by Rule (PBR) registration submitted through the online ePermits process for your facility located near Channelview, Harris County. Based on the information submitted and review completed by the Rule Registration Section, this is an acknowledgement that Equistar Chemicals, LP has certified emissions associated with Equistar Chemicals Channelview Complex under the Permit By Rule(s) listed above. For rule information see: www.tceq.texas.gov/permitting/air/nav/numerical_index.html. Records must be maintained in accordance with Title 30 Texas Administrative Code § 106.8 to demonstrate compliance with the claimed PBRs.

As referenced in 30 TAC § 116.116(d)(2), all changes authorized under Chapter 106 to a permitted facility shall be incorporated into the NSR Permit No. 1768,49120 when it is amended or renewed.

As a reminder, regardless of the authorization mechanism, all facilities must be in compliance and operate in accordance with all rules and regulations of the TCEQ and the U.S. Environmental Protection Agency. Facilities not operating in accordance with these rules and regulations, or that misrepresented or failed to fully disclose all relevant facts in obtaining this authorization may be subject to formal enforcement action.

This action is taken under authority delegated by the Executive Director of the TCEQ. If you need further information or have questions, please contact the Rule Registrations Section at (512) 239-1250 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Mark T. Meyer

Mark Meyer, Manager

Rule Registrations Section
Air Permits Division
Texas Commission on Environmental Quality

[Project Number: 302186]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 6, 2019

MR TOM WARNEMENT
AIR ENVIRONMENTAL MANAGER
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Re: Pollution Control Projects Air Quality Standard Permit
(Effective 2/9/2011)
Standard Permit Registration Number: 156142
Standard Permit Expiration Date: May 6, 2029
Equistar Chemicals LP
Equistar Chemicals Channelview Complex
Affected Permit: 1768
Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705

Dear Mr. Warnement:

This is in response to your Form PI-1S (Air Quality Standard Permit for Pollution Control Projects) regarding the proposed construction to be located at 8280 Sheldon Rd, Channelview, Harris County. We understand that this registration is for emissions associated with replacing the burner in heater EPN 37E03 with three smaller burners.

After evaluation of the information you submitted, the Texas Commission on Environmental Quality (TCEQ) has determined that your proposed emissions are authorized by this standard permit pursuant to Title 30 Texas Administrative Code § 116.602 (30 TAC § 116.602) if constructed and operated as represented in your registration. This standard permit was issued under the Texas Clean Air Act (TCAA) § 382.011, which authorizes the commission to control the quality of the state's air; TCAA § 381.023, which authorizes the commission to issue orders necessary to carry out the policy and purposes of the TCAA; and § 382.05195, which authorizes the commission to issue standard permits. Authorized emissions are listed on the attached table.

You must begin construction or modification of these facilities in accordance with this standard permit no later than 18 months after the date of this letter. After completion of construction or modification, the appropriate TCEQ Regional Office must be notified prior to commencing operation and the facility shall be operated in compliance with all applicable conditions of the claimed standard permit.

You are reminded that 30 TAC § 116.615 requires that any construction or change authorized by this standard permit be administratively incorporated into the affected facilities' permit(s) at the next amendment or renewal.

You are also reminded that these facilities must be in compliance with all rules and regulations of the TCEQ and of the U.S. Environmental Protection Agency at all times.

Re: Standard Permit Registration Number 156142

If you need further information or have any questions, please contact Mr. Jonathan Wilmoth, P.E. at (512) 239-0567 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Mark T. Meyer

Mark Meyer, Manager
Rule Registrations Section
Air Permits Division
Texas Commission on Environmental Quality

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston

Project Number: 299149

Standard Permit Maximum Emission Rates Table
Permit Number 156142

The facilities and emissions included in this table have been represented and reviewed as the maximum emissions authorized by this standard permit registration.

Emission Point No.	Source Name	NSR Permit	Pollutant	Authorized PCP Emissions	
				lbs/hr	tpy
37E03	**Recycle Heater F-3701**	1768	**NO_X**	2.45	10.74
			CO	2.06	9.02
			SO_2	0.18	0.79
			PM	0.19	0.82
			PM_{10}	0.19	0.82
			$PM_{2.5}$	0.19	0.82
			VOC	0.13	0.55

VOC - volatile organic compounds
NO_x - total oxides of nitrogen
CO - carbon monoxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$ as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
SO_2 - sulfur dioxide

Date: May 6, 2019

I. Additional Questions for Specific NSR Minor Permit Actions

V. Nonattainment Permits	
Complete the offsets section of the Federal Applicability sheet of this workbook.	Yes
Does the application contain a detailed LAER analysis? (attachment or as notes on the BACT sheet of this workbook)	Yes
Does the application contain an analysis of alternative sites, sizes, production processes, and control techniques for the proposed source? The analysis must demonstrate that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that locati+A124on.	Yes

VIII. Federal Regulatory Questions
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.
A. Title 40 CFR Part 60

Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	A, K, Ka, Kb, VV, NNN
B. Title 40 CFR Part 61	
Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	A, FF, V
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	A, F, G, H, YY, FFFF, DDDDD, ZZZZ

IX. Emissions Review

A. Impacts Analysis

Any change that results in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet of this workbook.

Does this project require an impacts analysis?	Yes

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade

Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	Yes
Is Mass Emissions Cap and Trade applicable to the new or modified facilities?	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Permit primary industry (must be selected for workbook to function)

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Consolidate	Yes	F34E00	F34E00	OP1 Fugitives	VOC	74.84	323.31	*0.0001*	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	F34E00	F34E00	OP1 Fugitives	NH3	0.12	0.53	0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	34FGWATER	34FGWATER	OP1 Wastewater Fugitives	VOC	1.35	5.89	0	0	Wastewater Facilities	
Not New/Modified	Yes	34FGWATER	34FGWATER	OP1 Wastewater Fugitives	Acetone	<0.01	<0.01	0	0	Wastewater Facilities	
Not New/Modified	Yes	OP1FUGEXP	EOP1FUGEXP	OP1 Fugitives	VOC	0.46	2.01	0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	FUGNH3	EFUGNH3	OP1 NH3 Fugitives	NH3	0.27	1.18	0	0	Fugitives: Piping and Equipment Leak	
Not New/Modified	Yes	34E08	34E08	Decoke Vent	CO	132	113.75	0	0	Process Vent	
Not New/Modified	Yes	34E08	34E08	Decoke Vent	PM	36	6.5	0	0	Process Vent	
Not New/Modified	Yes	34E08	34E08	Decoke Vent	VOC	0.11	0.1	0	0	Process Vent	
Not New/Modified	Yes	OP1DECOKE2	EOP1DECOKE2	Decoke Vent 2	CO	310	59.6	0	0	Process Vent	
Not New/Modified	Yes	OP1DECOKE2	EOP1DECOKE2	Decoke Vent 2	VOC	0.08	0.02	0	0	Process Vent	
Not New/Modified	Yes	OP1DECOKE2	EOP1DECOKE2	Decoke Vent 2	PM	1.07	0.1	0	0	Process Vent	
Not New/Modified	Yes	OP1DECOKE2	EOP1DECOKE2	Decoke Vent 2	PM10	1.07	0.1	0	0	Process Vent	
Not New/Modified	Yes	OP1DECOKE2	EOP1DECOKE2	Decoke Vent 2	PM2.5	1.07	0.1	0	0	Process Vent	
Not New/Modified	Yes	34E10	34E10	Reactor Regeneration Vent	CO	3.56	1.02	0	0	Process Vent	
Not New/Modified	Yes	34E10	34E10	Reactor Regeneration Vent	SO2	9.51	2.23	0	0	Process Vent	
Not New/Modified	Yes	34E10	34E10	Reactor Regeneration Vent	VOC	1.38	0.17	0	0	Process Vent	
Not New/Modified	Yes	38E11	38E11	OP1 Cooling Tower	VOC	10.58	19.87	0	0	Cooling Tower	
Not New/Modified	Yes	38E11	38E11	OP1 Cooling Tower	PM	6.62	29	0	0	Cooling Tower	
Not New/Modified	Yes	38E11	38E11	OP1 Cooling Tower	PM10	3.31	14.5	0	0	Cooling Tower	
Not New/Modified	Yes	38E11	38E11	OP1 Cooling Tower	PM2.5	0.01	0.06	0	0	Cooling Tower	
Not New/Modified	Yes	35E03	35E03	Seal Oil Reservoir Vent	VOC	0.01	0.01	0	0	Process Vent	
Not New/Modified	Yes	35E04	35E04	Seal Oil Reservoir Vent	VOC	0.01	0.01	0	0	Process Vent	
Not New/Modified	Yes	34PVD3420	34PVD3420	Dilution Generator Vent	VOC	1.69	0.14	0	0	Process Vent	
Not New/Modified	Yes	34PVD3420	34PVD3420	Dilution Generator Vent	Acetone	0.05	<0.01	0	0	Process Vent	
Not New/Modified	Yes	34STMFUG	34STMFUG	Dilution Steam Vent	VOC	0.85	1.86	0	0	Process Vent	
Not New/Modified	Yes	34STMFUG	34STMFUG	Dilution Steam Vent	Acetone	0.02	0.05	0	0	Process Vent	
Not New/Modified	Yes	38HTF3804A/B	38HTF3804A/B	Superheater Vents	VOC	3.81	0.01	0	0	Process Vent	
Not New/Modified	Yes	34HTHTRS	34HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-3401 - F-3415; F-3418; F-3419 Common Stack Steam Super Heaters: F380001 A/B	NOx	494.93	2022.33	0	0	Furnace	
Not New/Modified	Yes	34HTHTRS	34HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-3401 - F-3415; F-3418; F-3419 Common Stack Steam Super Heaters: F380001 A/B	CO	395.03	1612.25	0	0	Furnace	
Not New/Modified	Yes	34HTHTRS	34HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-3401 - F-3415; F-3418; F-3419 Common Stack Steam Super Heaters: F380001 A/B	SO2	33.85	138.17	0	0	Furnace	
Not New/Modified	Yes	34HTHTRS	34HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-3401 - F-3415; F-3418; F-3419 Common Stack Steam Super Heaters: F380001 A/B	PM	37.61	153.52	0	0	Furnace	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	34HTHTRS	34HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-3401 - F-3415; F-3418; F-3419 Common Stack Steam Super Heaters: F380001 A/B	NH3	1.3	5.26	0	0	Furnace	
Not New/Modified	Yes	34HTHTRS	34HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-3401 - F-3415; F-3418; F-3419 Common Stack Steam Super Heaters: F380001 A/B	VOC	24.98	99.18	0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT0102	F-3401 and F-3402	NOx			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT0304	F-3403 and F-3404	CO			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT0506	F-3405 and F-3406	SO2			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT0708	F-3407 and F-3408	PM			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT0910	F-3409 and F-3410	VOC			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT1112	F-3411 and F-3412	NOx			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT1314	F-3413 and F-3414	CO			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT18	Ethane Cracking Heater: F3418	SO2			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT15	OP-1 Cracker Heater: F-3415	PM			0	0	Furnace	
Not New/Modified	No	34HTHTRS	34HTHT38AB	Common Stack: Steam Super Heaters: F380001 A/B with Common Stack	VOC			0	0	Furnace	
Not New/Modified	Yes	EF3419	EF3419	OP-1 Cracking Heater F-3419	NOx	38.4	25.71	0	0	Furnace	
Not New/Modified	Yes	EF3419	EF3419	OP-1 Cracking Heater F-3419	CO	33.88	148.38	0	0	Furnace	
Not New/Modified	Yes	EF3419	EF3419	OP-1 Cracking Heater F-3419	SO2	0.38	1.54	0	0	Furnace	
Not New/Modified	Yes	EF3419	EF3419	OP-1 Cracking Heater F-3419	PM	4.23	17	0	0	Furnace	
Not New/Modified	Yes	EF3419	EF3419	OP-1 Cracking Heater F-3419	NH3	2.69	11.78	0	0	Furnace	
Not New/Modified	Yes	EF3419	EF3419	OP-1 Cracking Heater F-3419	VOC	0.64	2.57	0	0	Furnace	
Not New/Modified	Yes	36E05	36E05	Regeneration Heater F-3601	NOx	2.5	2.63	0	0	Heater	
Not New/Modified	Yes	36E05	36E05	Regeneration Heater F-3601	CO	2.06	1.95	0	0	Heater	
Not New/Modified	Yes	36E05	36E05	Regeneration Heater F-3601	SO2	0.18	0.19	0	0	Heater	
Not New/Modified	Yes	36E05	36E05	Regeneration Heater F-3601	PM	0.19	0.18	0	0	Heater	
Not New/Modified	Yes	36E05	36E05	Regeneration Heater F-3601	VOC	0.13	0.12	0	0	Heater	
Consolidate	Yes	37E03	37E03	Recycle Heater F-3701	NOx	2.45	10.74	**-5.6**	**-24.53**	Heater	
Consolidate	Yes	37E03	37E03	Recycle Heater F-3701	CO	2.06	9.02	**-4.61**	**-20.2**	Heater	
Consolidate	Yes	37E03	37E03	Recycle Heater F-3701	SO2	0.18	0.79	**-0.4**	**-1.77**	Heater	
Consolidate	Yes	37E03	37E03	Recycle Heater F-3701	PM	0.19	0.82	**-0.42**	**-1.83**	Heater	
Consolidate	Yes	37E03	37E03	Recycle Heater F-3701	VOC	0.13	0.55	**-0.28**	**-1.23**	Heater	
New/Modified	Yes	38FL3801P/F	38E01	OP1 Flare	NOx	120.95	35.67	*16.65*	*19.37*	Control: Flare	
New/Modified	Yes				CO	623	181.15	*85.75*	*99.79*		
New/Modified	Yes				SO2	25.03	9.39	*14.23*	*5.59*		
New/Modified	Yes				VOC	1377.22	53.45	*1.32*	*4.3*		
Not New/Modified	Yes	38E3602	38E3602	Shelter J-3602	VOC	0.01	0.02	0	0	Process Vent	
Not New/Modified	Yes	38E3603	38E3603	Shelter J-3603	VOC	0.08	0.34	0	0	Process Vent	
Not New/Modified	Yes	38E3604	38E3604	Shelter J-3604	VOC	0.02	0.05	0	0	Process Vent	
Not New/Modified	Yes	38E3605	38E3605	Shelter J-3605	VOC	0.01	0.01	0	0	Process Vent	
Not New/Modified	Yes	38E3606	38E3606	Shelter J-3606	VOC	0.01	0.01	0	0	Process Vent	
Not New/Modified	Yes	38E3904	38E3904	Shelter J-3904	VOC	1.28	5.62	0	0	Process Vent	
Consolidate	Yes	OP1EN1	OP1EN1	Diesel Engine-Driven Air Compressor	NOx	1.73	3.88	**-1.73**	**-3.88**	Engine: Internal Combustion Engine, Spark Ignited	
Consolidate	Yes	OP1EN1	OP1EN1	Diesel Engine-Driven Air Compressor	CO	3.02	6.8	**-3.02**	**-6.8**	Engine: Internal Combustion Engine, Spark Ignited	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Consolidate	Yes	OP1EN1	OP1EN1	Diesel Engine-Driven Air Compressor	SO2	0.01	0.01	**-0.01**	**-0.01**	Engine: Internal Combustion Engine, Spark Ignited	
Consolidate	Yes	OP1EN1	OP1EN1	Diesel Engine-Driven Air Compressor	PM	0.02	0.04	**-0.02**	**-0.04**	Engine: Internal Combustion Engine, Spark Ignited	
Consolidate	Yes	OP1EN1	OP1EN1	Diesel Engine-Driven Air Compressor	VOC	0.16	0.37	**-0.01**	**-0.02**	Engine: Internal Combustion Engine, Spark Ignited	
Not New/Modified	Yes	39TK3903	39E03	Storage Tank 3903 (Wastewater/Storm Water)	VOC	1.93	5	0	0	Wastewater Facilities	
Not New/Modified	Yes	37TK3709	37E09	Antifoulant Storage Tank 3709	VOC	0.28	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	38TK3802	38E07	Pyrolysis Gas Oil Tank 38302	VOC	7.38	0.88	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	38TK3802	38E07	Pyrolysis Gas Oil Tank 38302	Benzene	0.05	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	38TK38303	38E08	Storage Tank 38303	VOC	2.07	0.23	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	38TK38303	38E08	Storage Tank 38303	Benzene	<0.01	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	39TK3913	39E13	Pyrolysis Fuel Oil Tank 3913	VOC	11.58	8.06	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	39TK3914	39E14	Storage Tank 3914	VOC	2.37	1.95	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	39TK3943	39E43	Storage Tank 3943	VOC	2.37	3.64	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	No	39TK3901	39E01	Storage Tank 3901	VOC	8.38		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3901	39E01	Storage Tank 3901	Benzene	2.56		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3901	39E01	Storage Tank 3901	H2S	0.01		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3902	39E02	Storage Tank 3902	VOC	8.38		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3902	39E02	Storage Tank 3902	Benzene	2.56		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3902	39E02	Storage Tank 3902	H2S	0.01		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	39TK3902	39E01 to 39E02	Storage Tanks (2 total)	VOC		24.68	0	0		
Not New/Modified	Yes	39TK3902	39E01 to 39E02	Storage Tanks (2 total)	Benzene		10.62	0	0		
Not New/Modified	Yes	39TK3902	39E01 to 39E02	Storage Tanks (2 total)	H2S		0.02	0	0		
Not New/Modified	No	39TK3904	39E04	Storage Tank 3904	VOC	5.45		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3904	39E04	Storage Tank 3904	Benzene	1.45		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3904	39E04	Storage Tank 3904	H2S	0.01		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3905	39E05	Storage Tank 3905	VOC	5.45		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3905	39E05	Storage Tank 3905	Benzene	1.45		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3905	39E05	Storage Tank 3905	H2S	0.01		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3906	39E06	Storage Tank 3906	VOC	5.81		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3906	39E06	Storage Tank 3906	Benzene	1.54		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3906	39E06	Storage Tank 3906	H2S	0.01		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3907	39E07	Storage Tank 3907	VOC	5.81		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3907	39E07	Storage Tank 3907	Benzene	1.54		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	No	39TK3907	39E07	Storage Tank 3907	H2S	0.01		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	39TK3907	39E04 to 39E07	Storage Tanks (4 total)	VOC	22.52	38.94	*22.52*	0		
Not New/Modified	Yes	39TK3907	39E04 to 39E07	Storage Tanks (4 total)	Benzene	5.98	9.61	*5.98*	0		
Not New/Modified	Yes	39TK3907	39E04 to 39E07	Storage Tanks (4 total)	H2S	0.04	0.01	*0.04*	0		
Not New/Modified	Yes	39TK3911	39E11	Storage Tank 3911	VOC	2.27	6.84	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	39TK3911	39E11	Storage Tank 3911	Benzene	1.59	4.8	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	39TK3912	39E12	Storage Tank 3912	VOC	2.67	7.95	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	39TK3912	39E12	Storage Tank 3912	Benzene	1.87	5.56	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
Not New/Modified	Yes	36TK361003	OP1SMLT10	Antifoulant Tank 68423	VOC	0.32	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	34TK3455	34E12	Waste Caustic Tank 3455	VOC	0.51	1.62	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	38TK38008	38E008	Slop Oil Tank 38008	VOC	0.35	1.52	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	38TK38009	38E009	Wastewater Tank 38009	VOC	1.03	1.76	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	
Not New/Modified	Yes	38EK38010	38E010	Wastewater Tank 38010	VOC	1.46	4.85	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	38TK38011	38E011	Wastewater Tank 38011	VOC	2.8	6.41	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia	
Not New/Modified	Yes	ENMSSROUT	ENMSSROUT	MSS Vessel	VOC	4.37	0.05	0	0	MSS Activities	
Not New/Modified	Yes	OP1ANALY	EOP1ANALY	Analyzers	VOC	0.03	0.13	0	0	Process Vent	
Not New/Modified	Yes	OP1PV38055	OP1PV38055	Analyzer Vent	VOC	0.08	0.35	0	0	Process Vent	
Not New/Modified	Yes	38E3501A	38E3501A	OP-1 Analyzer	VOC	0.01	0.01	0	0	Process Vent	

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
F34E00	Yes											
34FGWATER	No	15										
EOP1FUGEXP	No	15	295087	3301989	15					10	75	
EFUGNH3	No	15	294647	3301759	40					100	150	
34E08	No	15	295109	3302110		90	1.5	131	900			
EOP1DECOKE2	No	15	295112	3302085	90		1.5	131	900			
34E10	No	15	295036	3301890		90	1.5	305.1	700			
38E11	No	15	294723	3301993	50							
35E03	No	15	295007	3301926	20							
35E04	No	15	294981	3301926								
34PVD3420	No	15	295000	3301900								
34STMFUG	No	15	295000	3301900						750	900	90
38HTF3804A/B	No	15										
34HTHTRS	No	15										
34HTHT0102	No	15	295095	3302047								
34HTHT0304	No	15	295096	3302069								
34HTHT0506	No	15	295096	3302092								
34HTHT0708	No	15	295096	3302115								
34HTHT0910	No	15	295096	3302138								
34HTHT1112	No	15	295097	3302160								
34HTHT1314	No	15	295094	3302184								
34HTHT18	No	15	295095	3302023								
34HTHT15	No	15	295096	3302202								
34HTHT38AB	No	15	294979	3302014								
EF3419	No	15	295085	3301821	194		8.5	45	340			
36E05	No	15	295110	3302027		85	3.5	38.9	1700			
37E03	No	15	295111	3302020		152	6.5	11	350			
38E01	Yes											
38E3602	No	15	294896	3301900								
38E3603	No	15	294896	3301965								
38E3604	No	15	294896	3302035								
38E3605	No	15	294962	3302015								
38E3606	No	15	295004	3302038								
38E3904	No	15										
OP1EN1	No	15			400	7.8	4.5	391.6	865			
39E03	No	15	294865	3301861		40	3	0.1	80			
37E09	No	15	294917	3302184		10.5	3	0.1	80			
38E07	No	15	295055	3302019	33	24	3	0.1	130			
38E08	No	15	295065	3302005		30	3	0.1	130			
39E13	No	15	294666	3301872		48	3	0.1	190			
39E14	No	15	294668	3301849		48	3	0.1	75			
39E43	No	15	294668	3301849		48	3	0.1	75			
39E01	No	15	294986	3301861		40	3	0.1	80			
39E02	No	15	294804	3301862		40	3	0.1	80			

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
39E01 to 39E02	No	15										
39E04	No	15	295038	3301854		48	3	0.1	80			
39E05	No	15	295080	3301852		48	3	0.1	80			
39E06	No	15	295750	3301875		48	3	0.1	80			
39E07	No	15	295750	3301837		48	3	0.1	80			
39E04 to 39E07	No	15										
39E11	No	15	294640	3301829		48	3	0.1	70			
39E12	No	15	294565	3301862		48	3	0.1	70			
OP1SMLT10	No	15										
34E12	No	15	295064	3302212	32							
38E009	No	15	294610	3302123	15							
38E010	No	15	294600	3302154	40							
ENMSSROUT	No	15	295087	3301989	15					100	75	
EOP1ANALY	No	15	295087	3301989	10							
OP1PV38055	No	15										
38E3501A	No	15										

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

I. Public Notice Applicability	
A. Application Type	
Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (a new criteria pollutant or a new VOC or PM species)?	No
Is there a new air contaminant in this application?	No

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

Notes:

1. Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10,and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.

2. All renewals require public notice.

This row is optional. If you do not think the table below accurately represents public notice applicability increases for your project, provide discussion here (1000 characters).	
Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No

Pollutant	Current Long-Term (tpy)	Consolidated Emissions (tpy)	Proposed Long-Term (tpy)	Project Change in Allowable (tpy)	PN Threshold	Notice required?
VOC	621.85	5.68	630.58	3.05	5	No
PM	208.17	0.86	207.16	-1.87	5	No
PM_{10}	14.60	0.00	14.60	0.00	5	No
$PM_{2.5}$	0.16	0.00	0.16	0.00	5	No
NO_x	2095.38	14.62	2100.96	-9.04	5	No
CO	2045.31	15.82	2133.92	72.79	50	Yes
SO_2	147.71	0.80	152.32	3.81	10	No
Pb	0.00	0.00	0.00	0.00	0.6	No
NH3	18.75	0	18.75	0	5	No
Acetone	0.07	0	0.07	0	5	No
Benzene	30.61	0	30.61	0	5	No
H2S	0.03	0	0.03	0	5	No

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

C. Is public notice required for this project as represented in this workbook? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
D. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting

Company Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting
Company Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

B. Public place

Place a copy of the full application (including all of this workbook and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	North Channel Branch Library
Physical Address:	15741 Wallisville Road
Address Line 2:	
City:	Houston
ZIP Code:	77049
County:	Harris
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program?	Spanish

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Not applicable

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at:

https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Lina Hidalgo
Mailing Address:	1001 Preston, Suite 911
Address Line 2:	
City:	Houston
State:	Texas
ZIP Code:	77002

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Adrian
Last Name:	Garcia
Title:	County Commissioner
Mailing Address:	4500 E Sam Houston Pkwy S Ste 215
Address Line 2:	
City:	Pasadena
State:	Texas
ZIP Code:	77505
Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Harris
This project will be located in an area that is in attainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	Ozone - Serious
Determination:	**This project will be located in a county with a Serious Ozone nonattainment classification, and the project will be reviewed under a Serious Ozone nonattainment classification. Complete the nonattainment section below and provide an analysis with the application.**

II. PSD and GHG PSD Applicability Summary			
Is netting required for the PSD analysis for this project?			**No**
Pollutant	**Project Increase**	**Threshold**	**PSD Review Required?**
CO	99.79	100	No
NO_x	19.37	40	No
PM	0	25	No
PM_{10}	0	15	No
$PM_{2.5}$	0	10	No
SO_2	5.59	40	No
Pb			
H_2S			
TRS			
Reduced sulfur compounds (including H_2S)			
H_2SO_4			
Fluoride (excluding HF)			
CO2e			

III. Nonattainment Applicability Summary			
Is netting required for the nonattainment analysis for this project?			**Yes**
If yes, the project increases listed below should be after netting has been performed. Attach the netting information to the application.			
Pollutant	**Project Increase (after netting)**	**Threshold**	**NA Review Required?**

Ozone (as VOC)	4.3	40	No
Ozone (as NO_x)	19.37	5	Yes

IV. Offset Summary (for Nonattainment Permits)			
Pollutant	**Offset Ratio**	**Offset Quantity Required (tpy)**	**Where is the offset coming from?**
Ozone (as NO_x)	1.20 : 1	23.244	Purchase

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

I. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option. Then skip sections II and III.	No
Select Application Type	Major Application

II. Direct Costs - Non-Renewal	
Type of Cost	**Amount**
Process and control equipment not previously owned by the applicant and not currently authorized under this chapter.	$0.00
Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements.	$0.00
Freight charges.	$0.00
Site preparation, including demolition, construction of fences, outdoor lighting, road, and parking areas.	$0.00
Installation, including foundations, erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration, and process control equipment.	$0.00
Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures.	$0.00
Ambient air monitoring network.	$0.00
Sub-Total:	$0.00

III. Indirect Costs - Non-Renewal	
Type of Cost	**Amount**
Final engineering design and supervision, and administrative overhead.	$0.00
Construction expense, including construction liaison, securing local building permits, insurance, temporary construction facilities, and construction clean-up.	$0.00
Contractor's fee and overhead.	$0.00
Sub-Total:	$0.00

IV. Calculations - Non-Renewal
For GHG permits: A single PSD fee (calculated on the capital cost of the project per 30 TAC § 116.163) will be required for all of the associated permitting actions for a GHG PSD project. Other NSR permit fees related to the project that have already been remitted to the TCEQ can be subtracted when determining the appropriate fee to submit with the GHG PSD application. Identify these other fees in the GHG PSD permit application.

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Estimated Capital Cost		Major Application Fee
Less than $300,000		$3,000 (minimum fee)
$300,000 - $7,500,000		1.0% of capital cost
$300,000 - $25,000,000		N/A
Greater than $7,500,000		$75,000 (maximum fee)
Greater than $25,000,000		N/A

Your estimated capital cost:	**$0.00**	Minimum fee applies.
Permit Application Fee:		**$3,000.00**

VI. Total Fees

Note: fees can be paid together with one payment or as two separate payments.

Non-Renewal Fee	$3,000.00
Total	$3,000.00

VII. Payment Information

A. Payment One (required)

Was the fee paid online?	No
Enter the fee amount:	$3,000
Enter the check, money order, ePay Voucher, or other transaction number:	WRS0019806
Enter the Company name as it appears on the check:	Equistar Chemicals

C. Total Paid	**$3,000.00**

VIII. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Impacts

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
Ozone	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
VOC	No	MERA analysis, steps 0-2 only or using screening tables	Attach a detailed description of which MERA step was met for each species in the project. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
NH3	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Acetone	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
CO	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
PM	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
PM10	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
PM2.5	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
SO2	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NOx	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
Benzene	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
H2S	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Plant Type	Current Tier I BACT	Confirm	Additional Notes
Plant fuel gas facility	Maximum short term H2S emissions: 0.1 gr/dscf or 160 ppmv. Maximum annual H2S		

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
Consolidate	F34E00	Fugitives: Piping and Equipment Leak	VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	Complying with 28VHP for components with vapor pressure > 0.002 psia and > 10% VOC
			MSS	Same as normal operation BACT requirements.	Yes	No changes to MSS
Consolidate	37E03	Heater	NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu. Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu. CEMS required for 100 MMBtu/hr or greater.	Yes	Project did not trigger a major modification, thus not a new BACT review since there was no increase in emissions from the heater.
			MSS	Same as normal operation BACT requirements.	Yes	No changes to MSS
New/Modified	38FL3801P/F	Control: Flare	NOx	Provide emission factor used and reference.	Yes	Use TCEQ factor of 0.068 lb/MMBtu for low Btu, steam-assisted flare
			CO	Provide emission factor used and reference.	Yes	Use TCEQ factor of 0.3503 lb/MMBtu for high Btu, steam-assisted flare

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			SO2	Provide emission factor used and reference.	Yes	Natural gas has less than 5 grains/100 dscf
			VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	Meets 98% control efficiency and 99% for compounds up to 3 carbons
			MSS	Same as normal operation BACT requirements.	Yes	No changes to MSS
Consolidate	OP1EN1	Engine: Internal Combustion Engine, Spark Ignited	NOx	1.0 g/bhp-hr for engines less than 500 hp, 0.5 g/bhp-hr for engines greater than or equal to 500 hp. 0.7 g/bhp-hr is acceptable with vendor guarantee. Achieved through good combustion practices. Provide detail about engine size and numeric value. Rich burn engine: catalytic converter required and no liquid fuel allowed except for a limited number of backup hours. Provide detail of fuel and number of hours requested.	Yes	Tier 4 engine
			MSS	Minimize duration and occurrence of MSS activities. NOx and CO: provide case-by-case analysis. Pipelines: VOC in compressor, suction line, and discharge line may be vented.	Yes	No change to MSS

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Monitoring

This sheet provides the minimum acceptable requirements to demonstrate compliance through monitoring for each pollutant proposed to be emitted from each FIN. This sheet also includes measuring techniques for sources of significant emissions in the project.

Instructions:
1. The unit types listed under Unit Type (column B) include all new, modified, consolidated, and/or renewed sources as indicated on the "Unit Types - Emission Rates" sheet. Each new, modified, consolidated, and/or renewed source must address how compliance will be demonstrated.
2. The pollutants listed in Pollutant (column C) include the pollutants indicated on the "Unit Types - Emission Rates" sheet.

Monitoring (30 TAC § 116.111(a)(2)(G))
3. The minimum acceptable monitoring is automatically populated for each unit type and pollutant.
   - Additional monitoring may be required, particularly for Title V sources, and will be included in the NSR and/or Title V permits.
4. Fully expand the Minimum Monitoring Requirements (column D) by increasing the row heights so all text is visible. (Place the cursor on the bottom of the number line to the far left of the screen, click and drag downward until all text is visible.)
5. Review the monitoring and confirm that you will meet all representations listed on the sheet and any additional attachments by entering or selecting "Yes" in Confirm (column E).
6. Add additional notes as necessary in Additional Notes for Monitoring (column F), limited to 500 characters or fewer. Examples include the following:
   - Proposed monitoring for pollutants or units that list "See additional notes:";
   - Details requested in the populated data;
   - Alternative monitoring you are proposing; and
   - Any additional information relevant to the minimization of emissions.
7. Cap EPNs do not need monitoring (leave those rows blank).

Measurement of Emissions (30 TAC § 116.111(a)(2)(B))
Note: this section will be greyed out if this project does not require PSD or nonattainment review, as represented on the General sheet.
7. For each pollutant with a project increase **greater** than the PSD significant emission rate, select the proposed measurement technique using the dropdown (column G).
8. For each pollutant with a project increase **less** than the PSD significant emission rate: leave blank.
9. If selecting "other", provide details in Additional Notes for Measuring (column H).
10. You may also use the Additional Notes for Measuring (column H) to provide more details on a selection.

Click here to return to Cover Sheet.

Important Note: The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours. All required records must be maintained in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application. The site must make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner. The applicant must comply with any additional recordkeeping requirements specified in special conditions in the permit. All records must be retained in the file for at least two years following the date that the information or data is obtained. Some permits are required to maintain records for five years. [30 TAC § 116.115(b)(2)(E)]

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
F34E00	Fugitives: Piping and Equipment Leak	VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and a replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes	Follow LDAR monitoring program 28VHP		
37E03	Heater	NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes			

38FL3801P/F	Control: Flare	NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO	Pilot flame presence monitored continuously. Waste gas flow and	Yes			
		SO2	Pilot flame presence monitored continuously. Waste gas flow and	Yes			
		VOC	Pilot flame presence monitored continuously. Waste gas flow and	Yes			
OP1EN1	Engine: Internal Combustion Engine, Spark Ignited	NOx	Monitor and record startups, shutdowns, maintenance and hours of operation.	Yes			

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: _10/01/2019_
Permit #: ___1768_____
Company: _Equistar___

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	Email	11/19/2019
Hard copy of the General sheet with original (ink) signature	Mail	11/19/2019
Professional Engineer Seal	Not applicable	
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form		
Area map	Mail	11/19/2019
Plot plan	Mail	11/19/2019
Process description	Mail	11/19/2019
Process flow diagram	Mail	11/19/2019
List of MSS activities		
State regulatory requirements discussion	Mail	11/19/2019
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	Mail	11/19/2019
Netting analysis (if required) - Tables 3F and 4F as needed	Not applicable	
D. Technical Information		
BACT discussion, if additional details are attached	Email	11/19/2019
Monitoring information, if additional details are attached	Email	11/19/2019
Material Balance (if applicable)	Not applicable	
Calculations		
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	Email	11/19/2019
Electronic Modeling Evaluation Workbook: SCREEN3	Email	11/19/2019
Electronic Modeling Evaluation Workbook: NonSCREEN3	Not applicable	
PSD modeling protocol		
F. Additional Attachments		
Emissions Calculations	Email	11/19/2019
Expedited Permit Fee	Mail	11/19/2019

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General Information

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

EMEW Version No.: Version 2.2

Purpose Statement:
This workbook is completed by the applicant and submitted to the Texas Commission on Environmental Quality (TCEQ), specifically, the Air Dispersion Modeling Team (ADMT) for review. This workbook is a tool available for all projects using SCREEN3 for an impacts review and its use is required starting June 1, 2019. Provide the workbook with the permit application submittal for any Minor New Source Review project requiring a modeling impacts demonstration.

This workbook follows the guidance outlined in the Air Quality Modeling Guidelines (APDG 6232, September 2018) which can be found here:

https://www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf

Workbook Instructions:
1. Save a copy of the workbook to your computer or desktop prior to entering data.
2. Complete all required sections leaving no blanks. You may use the "tab" button or the arrow keys to move to the next available cell. Use "enter" to move down a line. Note: drop-downs are case-sensitive.
3. Fill in the workbook in order, do not skip around as this will cause errors. Use caution if changing a previously entered entry.
4. Not applicable sections of this workbook will be hidden as data is entered. For example, answering "No" to "Is downwash applicable? " will hide these sections of the workbook required only for downwash entry.
5. Email the workbook electronic file (EMEW) and any attachments to the Air Permits Initial Review Team. The subject line should read "Company Name - Permit Number (if known) - NSR Permit Application". Email address:

apirt@tceq.texas.gov

6. If printing the EMEW, follow the directions below to create a workbook header.
7. Printing the EMEW is not required for submitting to the Air Permits Division (APD); however, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required. To print the workbook, follow the instructions below. Please be aware, several sheets contain large amounts of data and caution should be taken if printing, such as the Speciated Emissions sheet.
8. Updates may be necessary throughout the review process. Updated workbooks must be submitted in electronic format to APD. For submittal to regional offices, local programs, or public places you only have to print sheets that had updates. Be sure to change the headers accordingly.

Note: Since this will be part of the permit application, follow the instructions in the Form PI-1 General Application on where to send copies of your EMEW and permit application. The NSR Application Workbook can be found here:
https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/nsrapp-tools.html

Create Headers Before Printing:
1. Right-click one of the workbook's sheet tabs and "Select All Sheets."
2. Enter the "Page Layout View" by using the navigation ribbon's View > Workbook Views > Page Layout, or by clicking the page layout icon in the lower-right corner of Excel.
3. Add the date, company name, and permit number (if known) to the upper-right header. Note that this may take up to a minute to update your spreadsheet. Select any tab to continue working on the spreadsheet.

Printing Tips:
While APD does not need a hard copy of the full workbook, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required.
1. The default printing setup for each sheet in the workbook is set for the TCEQ preferred format. The print areas are set up to not include the instructions on each sheet.
2. You have access to change all printing settings to fit your needs and printed font size. Some common options include:
   -Change what area you are printing (whole active sheet or a selection);
   -Change the orientation (portrait or landscape);
   -Change the margin size; and
   -Change the scaling (all columns on one sheet, full size, your own custom selection, etc.).

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General Information

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Acknowledgement:	Select from the drop down:
I acknowledge that I am submitting an authorized TCEQ Electronic Modeling Evaluation Workbook and any necessary attachments. Except for inputting the requested data, I have not changed the TCEQ Electronic Modeling Evaluation Workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	Choose an item

Administrative Information:	
Data Type:	**Facility Information:**
Project Number (6 Digits):	
Permit Number:	1768
Regulated Entity ID (9 Digits):	100542281
Facility Name:	Equistar Channelview
Facility Address:	8280 Sheldon Road
Facility County (select one):	Harris
Company Name:	Equistar Chemicals, LP
Company Contact Name:	Teresa Peneguy
Company Contact Number:	281-452-8330
Company Contact Email:	teresa.peneguy@lyb.com
Modeling Contact Name:	Teresa Peneguy
Modeling Company Name, as applicable:	LyondellBasell
Modeling Contact Number:	281-452-8330
Modeling Contact Email:	teresa.peneguy@lyb.com
New/Existing Site (select one):	Existing Site
Modeling Date (MM/DD/YYYY):	9/25/2019
UTM Zone (select one):	15

Sheet Instructions: Indicate in the Table of Contents which sections are applicable and included for this modeling demonstration. Select "X" from the drop down if the item below is included in the workbook. Note: This workbook is only for SCREEN3 analyses. Please use the separate Electronic Modeling Evaluation Workbook (EMEW) for the following air dispersion models: AERSCREEN, ISC/ISCPrime, and/or AERMOD.

Table of Contents

22	Speciated Chemicals	X

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General Information

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Included Attachments Instructions: The following are attachments that must be included with any modeling analysis. If providing the plot plan and area map with the permit application, ensure there is also a copy with the EMEW. The copy can be electronic.	**Select an X from the dropdown menu if included:**
Plot Plan:	
Instructions: Mark all that apply in the attached plot plan. For larger properties or dense source areas, provide multiple zoomed in plot plans that are legible.	
Property/Fence Lines all visible and marked.	X
North arrow included.	X
Clearly marked scale.	X
All sources and buildings are clearly labeled.	X
Area Map:	
Instructions: Mark all that apply in the attached area map.	
Annotate schools within 3,000ft of source's nearest property line.	X
All property lines are included.	X
Non-industrial receptors are identified.	X
Additional Attachments (as applicable): *Note: These are just a few examples of attachments that may need to be included. There may be others depending on the scope of the modeling analysis.*	**Select an X from the dropdown menu if included:**
Single Property Line Designation	
Include Agreement, Order, and map defining each petitioner.	X
Post Processing using Unit Impact Multipliers (UIMs)	
Include documentation on any calculations used with the UIMs (i.e., Step 3 of the MERA).	
Modeling Techniques	
Provide documentation on modeling techniques indicated in the workbook.	
Other Attachments *Provide a list in the box below of additional attachments being provided that are not listed above:*	
	Choose an item

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

I. Project Information
A. Project Overview: In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*
Natural gas is being added to flare to meet furture regulatory flame zone heat value requirements for flares.

II. Air Dispersion Modeling Preliminary Information			
Instructions: Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around. For larger text boxes, double click to type or insert text.			
A. Building Downwash			
No	Is downwash applicable? *(Select "Yes" or "No")*		
B. Type of Analyses: (Select "X" in all that apply)			
X	Minor NSR NAAQS	X	State Property Line
X	Health Effects		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

C. Constituents Evaluating: (Select "X" in all that apply)			
NAAQS: List all pollutants that require an modeling review. *(Select "X" in all that apply)*			
X	SO_2		PM_{10}
X	CO		$PM_{2.5}$
	Pb	X	NO_2
Both			Identify which averaging periods are being evaluated for NO_2.
Tier 2: 0.9			Identify the 1-hr NO_2 tier used for SCREEN3.
Tier 2: 0.9			Identify the annual NO_2 tier used for SCREEN3.
State Property Line: List all pollutants that require an modeling review. *(Select "X" in all that apply)*			
	H_2S	X	SO_2
	H_2SO_4		
Health Effects: Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.			
D. Dispersion Options: *Select "X" in the box to select an option. Note: if selecting both options, be sure to explain the reasoning for this in the box below.*			
X	Urban		
	Rural		
Provide justification on the dispersion option selected above in the following box:			
Located in municipality of Channelview Texas			

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

E. Meteorological Data:	
Select Meteorological Dataset Modeled:	Full Meteorological Data

F. Receptor Grid:
Describe the receptor grid being modeled in the following text box:
10 m - 25000 m array; at ground level

G. Terrain:	
Select the terrain option being modeled:	Flat
For justification on terrain selection, fill in the box below:	
Land is costal and flat	

H. Modeling Techniques: *Briefly describe any modeling techniques used for the SCREEN3 analyses. Provide additional attachments, if needed, to support the analyses.*
Modeled emissions equivalent to 1 lb/hr increase; emissions from flares sufficient height to not be impacted by downwash structures; fugitives modeled as less than 10 m, applied 0.6 factor per TCEQ memo

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Flare Source Parameters

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Height [m]	Heat Release (cal/s)	Description
38E01	38E01 Avg	Routine	295310.00	3301607.00	167.64	5351799.73	OP1 Flare

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Area Source Parameters

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Modeled Release Height [m]	Longer Side Length X [m]	Shorter Side Length Y [m]	Area Source Size Justification	Area Source Release Height Justification	Source Description
F34E00	F34E00	Routine	295000.00	3301900.00	1.00	243.00	206.00	Area of process unit	source at ground level	fugitive emission sources

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Point + Flare Emissions

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use	Downwash Structure Considered	Distance to Ambient Air (m)
38E01	38E01 Avg	Routine	Generic	1-hr			No	1.00	Generic Modeling at 1 lb/hr	No			497.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Area Source Emissions

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Averaging time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use	Distance to Ambient Air (m)
F34E00	F34E00	Routine	Generic	1-hr			No	1.00	maximum	Yes	0.60	420.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Speciated Emissions

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Speciated Emissions by Model ID

CAS #	Chemical Species	Other Species	Short-Term ESL (µg/m³)	Long-Term ESL (µg/m³)
106-99-0	1,3-butadiene		510	9.9
504-60-9	1,3-pentadiene		2000	200
29036-25-7	1-methyl-1H-indene		470	47
90-12-0	1-methylnaphthalene		200	20
N/A	Other (Please specify):	alkyl naphthalene	200	20
107-01-7	2-butene		10000	480
2870-04-4	2-ethyl-1,3-dimethylbenzene		2560	256
563-46-2	2-methyl-1-butene		290	480
563-45-1	3-methyl-1-butene		290	2200
91-57-6	2-methylnaphthalene		200	20
71-43-2	benzene		170	4.5
115-11-7	isobutene		180000	32000
1574-41-0	cis-piperylene		2000	200
542-92-7	cyclopentadiene		2000	200
287-92-3	cyclopentane		17000	1700
142-29-0	cyclopentene		3700	370
77-73-6	dicyclopentadiene		60	27
75-18-3	dimethyl sulfide		7.6	25
74-85-1	ethylene		1400	34
110-54-3	n-hexane		5600	200
592-41-6	1-hexene		1700	170
95-13-6	indene		240	24
75-28-5	isobutane		23000	7100
107-83-5	2-methylpentane		5600	200
78-78-4	isopentane		59000	7100
78-79-5	isoprene		130	120
26519-91-5	1-methylcyclopentadiene		1000	100
693-89-0	1-methylcyclopentene		3700	370
100-80-1	m-methylstyrene		250	48

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Speciated Emissions

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

91-20-3	naphthalene		440	50
106-97-8	n-butane		66000	7100
124-18-5	n-decane		1700	330
142-82-5	n-heptane		10000	2700
111-65-9	n-octane		5600	540
111-84-2	n-nonane		4800	450
109-66-0	n-pentane		59000	7100
103-65-1	n-propylbenzene		2500	250
109-67-1	1-pentene		290	480
85-01-8	phenanthrene		8	0.8
74-98-6	propane		Simple Asphyxiant	Simple Asphyxiant
115-07-1	propylene		Simple Asphyxiant	Simple Asphyxiant
100-42-5	styrene		110	140
108-88-3	toluene		4500	1200
1330-20-7	xylene		2200	180

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Combined Emissions

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

EPN	Model ID	Modeling scenario	Pollutant	Modeled Averaging time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]	Downwash Structure Considered
38E01	38E01 Avg	Routine	Generic	1-hr	NAAQS	SIL Analysis	No	Flare	1.00	
F34E00	F34E00	Routine	Generic	1-hr	Health Effects	Project-Wide	No	Area	1.00	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Modeling Scenarios

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Modeling Scenario	Scenario Description:
Routine	Average heat release

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	3.47000	14.3
H_2SO_4	1-hr		1
H_2SO_4	24-hr		0.3
H_2S	1-hr		2.16 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		3.24 *(If property is not residential, recreational, business, or commercial)*

Table 2. Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr		715
H_2SO_4	1-hr		50
H_2SO_4	24-hr		15
H_2S	1-hr		108 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		162 *(If property is not residential, recreational, business, or commercial)*

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Table 3. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	3.47000	7.8*
SO_2	3-hr	3.12000	25
SO_2	24-hr	1.39000	5
SO_2	Annual	0.28000	1
PM_{10}	24-hr		5
NO_2	1-hr	3.65000	7.5**
NO_2	Annual	0.29000	1
CO	1-hr	20.89000	2000
CO	8-hr	1.67000	500

Additional information for the De Minimis values listed above can be found at:
* www.tceq.texas.gov/assets/public/permitting/air/memos/appwso2.pdf
** www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

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Table 4. $PM_{2.5}$ Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Total Conc. = Secondary $PM_{2.5}$ + GLCmax (µg/m^3)	De Minimis (µg/m^3)
$PM_{2.5}$	24-hr		0	0.00000	1.2*
$PM_{2.5}$	Annual		0	0.00000	0.2*

Additional information for the De Minimis values listed above can be found at:
* www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Table 5. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + GLCmax] (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr		0	0	196
SO_2	3-hr		0	0	1300
SO_2	24-hr		0	0	365
SO_2	Annual		0	0	80
PM_{10}	24-hr		0	0	150
Pb	3-mo		0	0	0.15
NO_2	1-hr		0	0	188
NO_2	Annual		0	0	100
CO	1-hr		0	0	40000
CO	8-hr		0	0	10000

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Table 6. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + Secondary + GLCmax] (µg/m^3)	Standard (µg/m^3)
$PM_{2.5}$	24-hr		0	0	0	35
$PM_{2.5}$	Annual		0	0	0	12

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Unit Impact Multipliers

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Facility:

EPN	Model ID	Modeling Scenario	1-hr GLCmax ($\mu g/m^3$ per lb/hr)	3-hr GLCmax ($\mu g/m^3$ per lb/hr)	8-hr GLCmax ($\mu g/m^3$ per lb/hr)	24-hr GLCmax ($\mu g/m^3$ per lb/hr)	Annual GLCmax ($\mu g/m^3$ per lb/hr)
38E01	38E01 Avg	Routine	2.44E-01	0.21924	0.17052	0.09744	0.019488
F34E00	F34E00	Routine	2.49E+01	22.41	17.43	9.96	1.992

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Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]
1,3-butadiene	106-99-0	1-hr	510	0.31								
1,3-pentadiene	504-60-9	1-hr	2000	0.06								
1-methyl-1H-indene	29036-25-7	1-hr	470	0.27								
1-methylnaphthalene	90-12-0	1-hr	200	0.11								
alkyl naphthalene	N/A	1-hr	200	0.39								
2-butene	107-01-7	1-hr	10000	1.37								
2-ethyl-1,3-dimethylbenzene	2870-04-4	1-hr	2560	0.15								
2-methyl-1-butene	563-46-2	1-hr	290	0.08								
3-methyl-1-butene	563-45-1	1-hr	290	0.05								
2-methylnaphthalene	91-57-6	1-hr	200	0.90								
benzene	71-43-2	1-hr	170	0.72								
isobutene	115-11-7	1-hr	180000	1.15								
cis-piperylene	1574-41-0	1-hr	2000	0.02								
cyclopentadiene	542-92-7	1-hr	2000	0.07								
cyclopentane	287-92-3	1-hr	17000	0.04								
cyclopentene	142-29-0	1-hr	3700	0.04								
dicyclopentadiene	77-73-6	1-hr	60	0.06								
dimethyl sulfide	75-18-3	1-hr	7.6	0.10								
ethylene	74-85-1	1-hr	1400	5.73								
n-hexane	110-54-3	1-hr	5600	0.39								
1-hexene	592-41-6	1-hr	1700	0.15								
indene	95-13-6	1-hr	240	0.16								
isobutane	75-28-5	1-hr	23000	0.08								
2-methylpentane	107-83-5	1-hr	5600	0.08								
isopentane	78-78-4	1-hr	59000	0.29								
isoprene	78-79-5	1-hr	130	0.03								
1-methylcyclopentadiene	26519-91-5	1-hr	1000	0.19								
1-methylcyclopentene	693-89-0	1-hr	3700	0.02								
m-methylstyrene	100-80-1	1-hr	250	0.12								
naphthalene	91-20-3	1-hr	440	1.51								
n-butane	106-97-8	1-hr	66000	1.12								
n-decane	124-18-5	1-hr	1700	0.28								
n-heptane	142-82-5	1-hr	10000	0.16								
n-octane	111-65-9	1-hr	5600	1.02								
n-nonane	111-84-2	1-hr	4800	0.62								
n-pentane	109-66-0	1-hr	59000	1.19								
n-propylbenzene	103-65-1	1-hr	2500	0.22								
1-pentene	109-67-1	1-hr	290	0.15								
phenanthrene	85-01-8	1-hr	8	0.05								
propane	74-98-6	1-hr	Simple Asphyxiant	1.32								
propylene	115-07-1	1-hr	Simple Asphyxiant	5.34								
styrene	100-42-5	1-hr	110	0.15								
toluene	108-88-3	1-hr	4500	0.72								
xylene	1330-20-7	1-hr	2200	0.41								
1,3-butadiene	106-99-0	Annual	9.9	0.02								
1,3-pentadiene	504-60-9	Annual	200	0.00								
1-methyl-1H-indene	29036-25-7	Annual	47	0.02								
1-methylnaphthalene	90-12-0	Annual	20	0.01								
Other (Please specify):		Annual		0.03								

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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]
2-butene	107-01-7	Annual	480	0.11								
2-ethyl-1,3-dimethylbenzene	2870-04-4	Annual	256	0.01								
2-methyl-1-butene	563-46-2	Annual	480	0.01								
3-methyl-1-butene	563-45-1	Annual	2200	0.00								
2-methylnaphthalene	91-57-6	Annual	20	0.07								
benzene	71-43-2	Annual	4.5	0.06								
isobutene	115-11-7	Annual	32000	0.09								
cis-piperylene	1574-41-0	Annual	200	0.00								
cyclopentadiene	542-92-7	Annual	200	0.01								
cyclopentane	287-92-3	Annual	1700	0.00								
cyclopentene	142-29-0	Annual	370	0.00								
dicyclopentadiene	77-73-6	Annual	27	0.01								
dimethyl sulfide	75-18-3	Annual	25	0.01								
ethylene	74-85-1	Annual	34	0.46								
n-hexane	110-54-3	Annual	200	0.03								
1-hexene	592-41-6	Annual	170	0.01								
indene	95-13-6	Annual	24	0.01								
isobutane	75-28-5	Annual	7100	0.01								
2-methylpentane	107-83-5	Annual	200	0.01								
isopentane	78-78-4	Annual	7100	0.02								
isoprene	78-79-5	Annual	120	0.00								
1-methylcyclopentadiene	26519-91-5	Annual	100	0.01								
1-methylcyclopentene	693-89-0	Annual	370	0.00								
m-methylstyrene	100-80-1	Annual	48	0.01								
naphthalene	91-20-3	Annual	50	0.12								
n-butane	106-97-8	Annual	7100	0.09								
n-decane	124-18-5	Annual	330	0.02								
n-heptane	142-82-5	Annual	2700	0.01								
n-octane	111-65-9	Annual	540	0.08								
n-nonane	111-84-2	Annual	450	0.05								
n-pentane	109-66-0	Annual	7100	0.10								
n-propylbenzene	103-65-1	Annual	250	0.02								
1-pentene	109-67-1	Annual	480	0.01								
phenanthrene	85-01-8	Annual	0.8	0.00								
propane	74-98-6	Annual	Simple Asphyxiant	0.10								
propylene	115-07-1	Annual	Simple Asphyxiant	0.43								
styrene	100-42-5	Annual	140	0.01								
toluene	108-88-3	Annual	1200	0.06								
xylene	1330-20-7	Annual	180	0.03								

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Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
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Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]

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Company Name: __Equistar

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [μg/m^3]	10% ESL Step 3 Modeled GLCmax [μg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [μg/m^3]	10% ESL Step 4 Production Project Only GLCmax [μg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [μg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [μg/m^3]	Full ESL Step 5 GLCmax [μg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [μg/m^3]	Site Wide GLCni [μg/m^3]

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Administrative Information:	
Data Type:	**Facility Information:**
Project Number:	
Permit Number:	1768
Regulated Entity ID:	100542281
Facility Name:	Equistar Channelview
Company Name:	Equistar Chemicals, LP
Company Contact Name:	Teresa Peneguy
Company Contact Number:	281-452-8330
County:	Harris

This sheet documents the health effects review for Steps 3-7 of the Modeling Effects Review Applicability (MERA) Guidan

Instructions:

For modeling analyses which require modeling for health effects, fill in the information below. Note: Only steps of the MEF
assigned permit reviewer to review.
1. Select the chemical species from the drop down. The list only includes those chemical species identified on the Special
2. Next, select the averaging time being evaluated from the drop down. The ESL will change according to the averaging ti
3. Based on these selections, the CAS number and ESL will auto populate.
4. Following the MERA guidance, start at Step 3 and continue through the row for each applicable Step of the MERA. If a
5. If the demonstration is complete ("fall out of the MERA") before reaching the end of the row, you do not need to continu

Notes:

1. Step 3 in this sheet assumes that a Unit Impact Modeling demonstration was conducted. To demonstrate compliance v
2. SCREEN3 cannot be used to determine exceedance counts. Therefore, if exceedance counts are needed for Steps 5 or
3. The Chemical Species available in the drop down are based on the inputs from the "Speciated Emissions" sheet.
4. Do not insert, cut, or delete rows.

Tips:

1. For questions on what each step of the MERA requires, please see the following:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mera.pdf

Example:

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
2-sec-butyl-6-ethylaniline	71758-10-6	1-hr	100	122.00
2-sec-butyl-6-ethylaniline	71758-10-6	Annual	10	0.95

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
1,3-butadiene	106-99-0	1-hr	510	0.31
1,3-pentadiene	504-60-9	1-hr	2000	0.06
1-methyl-1H-indene	29036-25-7	1-hr	470	0.27
1-methylnaphthalene	90-12-0	1-hr	200	0.11
alkyl naphthalene	N/A	1-hr	200	0.39
2-butene	107-01-7	1-hr	10000	1.37
2-ethyl-1,3-dimethylbenzene	2870-04-4	1-hr	2560	0.15
2-methyl-1-butene	563-46-2	1-hr	290	0.08
3-methyl-1-butene	563-45-1	1-hr	290	0.05
2-methylnaphthalene	91-57-6	1-hr	200	0.90
benzene	71-43-2	1-hr	170	0.72
isobutene	115-11-7	1-hr	180000	1.15
cis-piperylene	1574-41-0	1-hr	2000	0.02
cyclopentadiene	542-92-7	1-hr	2000	0.07
cyclopentane	287-92-3	1-hr	17000	0.04
cyclopentene	142-29-0	1-hr	3700	0.04
dicyclopentadiene	77-73-6	1-hr	60	0.06
dimethyl sulfide	75-18-3	1-hr	7.6	0.10
ethylene	74-85-1	1-hr	1400	5.73
n-hexane	110-54-3	1-hr	5600	0.39
1-hexene	592-41-6	1-hr	1700	0.15
indene	95-13-6	1-hr	240	0.16
isobutane	75-28-5	1-hr	23000	0.08
2-methylpentane	107-83-5	1-hr	5600	0.08
isopentane	78-78-4	1-hr	59000	0.29
isoprene	78-79-5	1-hr	130	0.03
1-methylcyclopentadiene	26519-91-5	1-hr	1000	0.19
1-methylcyclopentene	693-89-0	1-hr	3700	0.02
m-methylstyrene	100-80-1	1-hr	250	0.12
naphthalene	91-20-3	1-hr	440	1.51
n-butane	106-97-8	1-hr	66000	1.12
n-decane	124-18-5	1-hr	1700	0.28
n-heptane	142-82-5	1-hr	10000	0.16

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
n-octane	111-65-9	1-hr	5600	1.02
n-nonane	111-84-2	1-hr	4800	0.62
n-pentane	109-66-0	1-hr	59000	1.19
n-propylbenzene	103-65-1	1-hr	2500	0.22
1-pentene	109-67-1	1-hr	290	0.15
phenanthrene	85-01-8	1-hr	8	0.05
propane	74-98-6	1-hr	Simple Asphyxiant	1.32
propylene	115-07-1	1-hr	Simple Asphyxiant	5.34
styrene	100-42-5	1-hr	110	0.15
toluene	108-88-3	1-hr	4500	0.72
xylene	1330-20-7	1-hr	2200	0.41
1,3-butadiene	106-99-0	Annual	9.9	0.02
1,3-pentadiene	504-60-9	Annual	200	0.00
1-methyl-1H-indene	29036-25-7	Annual	47	0.02
1-methylnaphthalene	90-12-0	Annual	20	0.01
Other (Please specify):		Annual		0.03

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
2-butene	107-01-7	Annual	480	0.11
2-ethyl-1,3-dimethylbenzene	2870-04-4	Annual	256	0.01
2-methyl-1-butene	563-46-2	Annual	480	0.01
3-methyl-1-butene	563-45-1	Annual	2200	0.00
2-methylnaphthalene	91-57-6	Annual	20	0.07
benzene	71-43-2	Annual	4.5	0.06
isobutene	115-11-7	Annual	32000	0.09
cis-piperylene	1574-41-0	Annual	200	0.00
cyclopentadiene	542-92-7	Annual	200	0.01
cyclopentane	287-92-3	Annual	1700	0.00
cyclopentene	142-29-0	Annual	370	0.00
dicyclopentadiene	77-73-6	Annual	27	0.01
dimethyl sulfide	75-18-3	Annual	25	0.01
ethylene	74-85-1	Annual	34	0.46
n-hexane	110-54-3	Annual	200	0.03
1-hexene	592-41-6	Annual	170	0.01
indene	95-13-6	Annual	24	0.01
isobutane	75-28-5	Annual	7100	0.01
2-methylpentane	107-83-5	Annual	200	0.01
isopentane	78-78-4	Annual	7100	0.02
isoprene	78-79-5	Annual	120	0.00
1-methylcyclopentadiene	26519-91-5	Annual	100	0.01
1-methylcyclopentene	693-89-0	Annual	370	0.00
m-methylstyrene	100-80-1	Annual	48	0.01
naphthalene	91-20-3	Annual	50	0.12
n-butane	106-97-8	Annual	7100	0.09
n-decane	124-18-5	Annual	330	0.02
n-heptane	142-82-5	Annual	2700	0.01
n-octane	111-65-9	Annual	540	0.08
n-nonane	111-84-2	Annual	450	0.05
n-pentane	109-66-0	Annual	7100	0.10
n-propylbenzene	103-65-1	Annual	250	0.02
1-pentene	109-67-1	Annual	480	0.01
phenanthrene	85-01-8	Annual	0.8	0.00
propane	74-98-6	Annual	Simple Asphyxiant	0.10
propylene	115-07-1	Annual	Simple Asphyxiant	0.43
styrene	100-42-5	Annual	140	0.01
toluene	108-88-3	Annual	1200	0.06
xylene	1330-20-7	Annual	180	0.03

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Modeling File Names

Date: _9/26/2019
Permit #: __1768
Company Name: __Equistar

Facility:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
Area	generic	1-hr	.s3i	fugitive source
OP1 HV	generic	1-hr	.s3i	flare

EPN	Model ID			GLCmax @ 1 lb/hr	
		ug/m3		ug/m3	
38E01	38E01	0.24	max beyond property line	0.2436	
F34E00	F34E00	41.50	@ property line 420m	24.9000	components < 10 m, applied 0.6 factor per TCEQ memo
					multiplier
Emissions Increase					0.08

EPN		48E01	F34E00	**GLCmax**	ESL	< 10%	48E01	F34E00	GLCmax	**Cmax annu**	ESL	< 10%
		Project Increase	PBR incorporation			ESL	Project Increase	PBR incorporation				ESL
		lb/hr	lb/hr	**ug/m3**	ug/m3		tpy	tpy	ug/m3	**ug/m3**	ug/m3	
NOx		16.65		**4.056**			19.37		1.077	**0.0862**		
CO		85.75		**20.889**			99.79		5.550	**0.4440**		
SO2		14.23		**3.466**			5.59		0.311	**0.0249**		
1,3-butadiene	106-99-0		0.01	**0.311**	510	Yes		0.05	0.311	**0.0249**	9.9	Yes
1,3-Methylpentadiene	504-60-9		0.00	**0.059**	2000	Yes		0.01	0.059	**0.0047**	200.0	Yes
1-Methylindene	29036-25-7		0.01	**0.266**	470	Yes		0.05	0.266	**0.0213**	47.0	Yes
1-Methylnaphthalene	90-12-0		0.00	**0.106**	200	Yes		0.02	0.106	**0.0085**	20.0	Yes
1-N-Decylnaphthalene	N/A		0.02	**0.392**	200	Yes		0.07	0.392	**0.0313**	20.0	Yes
2-Butene	107-01-7		0.05	**1.369**	10000	Yes		0.24	1.369	**0.1095**	480.0	Yes
2-ethyl-m-xylene	2870-04-4		0.01	**0.148**	2560	Yes		0.03	0.148	**0.0118**	256.0	Yes
2-methyl-1-butene	563-46-2		0.00	**0.081**	290	Yes		0.01	0.081	**0.0065**	480.0	Yes
2-methyl-3-butene	563-45-1		0.00	**0.045**	290	Yes		0.01	0.045	**0.0036**	2200.0	Yes
2-Methylnaphthalene	91-57-6		0.04	**0.901**	200	Yes		0.16	0.901	**0.0721**	20.0	Yes
Benzene	71-43-2		0.03	**0.721**	170	Yes		0.13	0.721	**0.0577**	4.5	Yes
Butylenes	115-11-7		0.05	**1.146**	180000	Yes		0.20	1.146	**0.0916**	32000.0	Yes
cis-1,3-pentadiene	1574-41-0		0.00	**0.025**	2000	Yes		0.00	0.025	**0.0020**	200.0	Yes
cyclopentadiene	542-92-7		0.00	**0.069**	2000	Yes		0.01	0.069	**0.0055**	200.0	Yes
cyclopentane	287-92-3		0.00	**0.035**	17000	Yes		0.01	0.035	**0.0028**	1700.0	Yes
cyclopentene	142-29-0		0.00	**0.044**	3700	Yes		0.01	0.044	**0.0035**	370.0	Yes
DCPD	77-73-6		0.00	**0.064**	60	Yes		0.01	0.064	**0.0051**	27.0	Yes
Di-Methylsulfide	75-18-3		0.00	**0.101**	7.6	Yes		0.02	0.101	**0.0080**	25.0	Yes
Ethylene	74-85-1		0.23	**5.734**	1400	Yes		1.01	5.734	**0.4587**	34.0	Yes
HEXANE	110-54-3		0.02	**0.391**	5600	Yes		0.07	0.391	**0.0313**	200.0	Yes
HEXENE	592-41-6		0.01	**0.151**	1700	Yes		0.03	0.151	**0.0121**	170.0	Yes
indene	95-13-6		0.01	**0.161**	240	Yes		0.03	0.161	**0.0129**	24.0	Yes
isobutane	75-28-5		0.00	**0.080**	23000	Yes		0.01	0.080	**0.0064**	7100.0	Yes
Isohexanes	107-83-5		0.00	**0.081**	5600	Yes		0.01	0.081	**0.0065**	200.0	Yes
Isopentane	78-78-4		0.01	**0.293**	59000	Yes		0.05	0.293	**0.0235**	7100.0	Yes

Isoprene	78-79-5		0.00	**0.027**	130	Yes		0.00	0.027	**0.0022**	120.0	Yes
Methyl-Cyclo-Pentadienes	26519-91-5		0.01	**0.185**	1000	Yes		0.03	0.185	**0.0148**	100.0	Yes
Methyl-Cyclo-Pentene	693-89-0		0.00	**0.022**	3700	Yes		0.00	0.022	**0.0018**	370.0	Yes
m-methyl-styrene	100-80-1		0.00	**0.119**	250	Yes		0.02	0.119	**0.0095**	48.0	Yes
naphthalene	91-20-3		0.06	**1.505**	440	Yes		0.26	1.505	**0.1204**	50.0	Yes
n-butane	106-97-8		0.05	**1.123**	66000	Yes		0.20	1.123	**0.0898**	7100.0	Yes
n-decane	124-18-5		0.01	**0.277**	1700	Yes		0.05	0.277	**0.0222**	330.0	Yes
N-Heptane	142-82-5		0.01	**0.162**	10000	Yes		0.03	0.162	**0.0130**	2700.0	Yes
N-Octane	111-65-9		0.04	**1.019**	5600	Yes		0.18	1.019	**0.0815**	540.0	Yes
Nonane	111-84-2		0.02	**0.619**	4800	Yes		0.11	0.619	**0.0495**	450.0	Yes
n-pentane	109-66-0		0.05	**1.189**	59000	Yes		0.21	1.189	**0.0952**	7100.0	Yes
n-propyl benzene	103-65-1		0.01	**0.216**	2500	Yes		0.04	0.216	**0.0172**	250.0	Yes
PENTENE	109-67-1		0.01	**0.150**	290	Yes		0.03	0.150	**0.0120**	480.0	Yes
Phenanthrene	85-01-8		0.00	**0.050**	8.0	Yes		0.01	0.050	**0.0040**	0.8	Yes
Propane	74-98-6	1.32	0.04	**1.319**	ple Asphyxiant		4.3	0.18	1.236	**0.0989**	ple Asphyxiant	
PROPYLENE	115-07-1		0.21	**5.336**	ple Asphyxiant			0.94	5.336	**0.4269**	ple Asphyxiant	
Styrene	100-42-5		0.01	**0.154**	110	Yes		0.03	0.154	**0.0123**	140.0	Yes
Toluene	108-88-3		0.03	**0.722**	4500	Yes		0.13	0.722	**0.0578**	1200.0	Yes
Xylene	1330-20-7		0.02	**0.411**	2200	Yes		0.07	0.411	**0.0329**	180.0	Yes

	1-hr		3-hr		8-hr		24-hr		Annual	
	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3
NO2	0.9	3.65							0.08	0.29
CO	1	20.89			0.7	14.62			0.08	1.67
SO2	1	3.47	0.9	3.12			0.4	1.39	0.08	0.28

Preliminary Determination Summary

Equistar Chemicals, LP
Permit Numbers 2128 and N1280

I. Applicant

Equistar Chemicals LP
PO Box 777
Channelview, TX 77530-0777

II. Project Location

Channelview Complex
8280 Sheldon Road
Harris County
Channelview, Texas 77530

III. Project Description

Equistar submitted an amendment to authorize additional natural gas for the flare (EPN 38E01) in anticipation of the proposed amendments to the 2002 Ethylene Production National Emission Standards for Hazardous Air Pollutants (NESHAP). Additionally, Permit by Rule (PBR) Registration Nos. 107709, 153580, 150031, 157735, 149329, and 155486, and Standard Permit Nos. 143753, 144030, and 157394 will be incorporated by consolidation. No increases in emissions from maintenance, startup, and shutdown (MSS) activities are included in this project.

IV. Emissions

Air Contaminant	Proposed Allowable Emission Rates (tpy)
VOC	435.35
NO_x	56.63
SO_2	8.30
CO	261.29
PM	3.90
PM_{10}	3.90
$PM_{2.5}$	3.90

V. Federal Applicability

The following chart illustrates the annual project emissions for each pollutant and whether this pollutant triggers PSD or Nonattainment (NA) review.

Pollutant	Project Emissions (tpy)	Major Mod Trigger (tpy)	NA Triggered Y/N	PSD Triggered Y/N
VOC	0.72	25 for NA 40 for PSD	N	N
NO_x	9.11	25 for NA 40 for PSD	Y	N
SO_2	3.37	40	N/A	N
CO	46.44	100	N/A	N

The site is located in Harris County, which has been designated as a serious nonattainment area for ozone. The Channelview Complex is an existing major source of VOC and NO_X, and the project will result in a significant net increase of NO_X.

The Channelview Complex is a named source. The site is located in an attainment area for at least one pollutant, and is an existing major stationary source. The project emission increases are below the applicable significant significance threshold in 40 CFR § 52.21(b)(23)(i) for VOC, SO_2, and CO. PSD BACT and air quality analysis (AQA) requirements do not apply.

Pollutant	Project Increase (tpy) [1]	NA Netting Trigger (tpy)	PSD Netting Trigger (tpy)	Netting Required Y/N	Net Emission Change (tpy) [2]	Major Mod Trigger (tpy)	PSD Triggered Y/N	NA Triggered Y/N
VOC [3]	0.72	5	40	N	N/A	25	N	N
NOx [3, 4]	9.11	5	40	Y	105.43	25	N	Y
SO_2 [4]	3.37	N/A	40	N	N/A	40	N	N
CO	46.44	N/A	100	N	N/A	100	N	N

1 Project Increases: Comparison of Baseline Actual to PTE (or Projected Actual) Increases only

2 Net Emissions: Baseline Actual to PTE (or Projected Actual) for the project currently under review, Baseline Actual to PTE for all other increases and decreases within netting window.

3 Ozone precursor. Either pollutant precursor can trigger BACT/LAER and impacts analysis, as applicable.

[4] $PM_{2.5}$ precursor. Not used to trigger $PM_{2.5}$ BACT/LAER or impacts analysis at this time.

VI. Control Technology Review

A control technology review is required for all new and modified sources. The following controls required by the permits satisfy LAER for emissions of NO_X, based on a review of recently issued permits from Texas and other states, and consideration of RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant.

Flare

The flare is designed to meet the requirements of 40 CFR Part 60.18 and to achieve a VOC compound destruction efficiency of 99% for compounds with up to three carbons, and 98% for compounds with four or more carbon atoms. The flare is equipped with a continuous flow monitor and composition analyzer.

VII. Air Quality Analysis

The air quality analysis (AQA) is acceptable for all review types and pollutants. The results are summarized below.

A. Minor Source NSR and Air Toxics Review

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
SO_2	1-hr	0.19	14.3

Table 2. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
SO_2	1-hr	0.19	7.8
SO_2	3-hr	0.17	25
SO_2	24-hr	0.08	5
SO_2	Annual	0.02	1
NO_2	1-hr	2.26	7.5

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
NO_2	Annual	0.18	1
CO	1-hr	10.14	2,000
CO	8-hr	7.10	500

The GLC_{max} are the maximum predicted concentration associated with one year of meteorological data.

The justification for selecting the EPA's interim 1-hr NO_2 and 1-hr SO_2 De Minimis levels was based on the assumptions underlying EPA's development of the 1-hr NO_2 and 1-hr SO_2 De Minimis levels. As explained in EPA guidance memoranda[1,2], the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 and 1-hr SO_2 NAAQS.

VIII. Offsets

The site is located in Harris County, which has been designated as a serious nonattainment area for ozone. The Channelview Complex is an existing major source of VOC and NO_X, and the project will result in a significant net increase of NO_X.

When issued, the permit requires that the permit holder offset the project emission increase for facilities authorized by this permit prior to the commencement of operation, through participation in the TCEQ Emission Banking and Trading (EBT) Program in accordance with the rules in 30 TAC Chapter 101, Subchapter H.

The permit holder shall use 10.9 tons per year (tpy) of NO_X credits to offset the 9.1 tpy NO_X project emission increase for the facilities authorized by this permit at a ratio of 1.2 to 1.0.

Prior to the commencement of operation, the permit holder is required to obtain approval from the TCEQ EBT Program for the credits being used and then submit a permit alteration or amendment request to the TCEQ Air Permits

[1] www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf
[2] www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

Division (and copy the TCEQ Regional Office) to identify approved credits by TCEQ credit certificate number.

IX. Alternative Site Analysis and Compliance Certification

The applicant has submitted the required demonstration relating to consideration of alternative sites and Clean Air Act compliance status for sites owned or operated by the applicant (or by any entity controlling, controlled by, or under common control with the applicant). The analysis demonstrated that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that location.

X. Conclusion

As described above, the applicant has demonstrated that the project meets all applicable rules, regulations and requirements of the Texas and Federal Clean Air Acts. The Executive Director's preliminary determination is that the permits should be issued.

Special Conditions

Permit Numbers 2128 and N280

Emission Limitations

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in the special conditions of this permit.

2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compound (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable emission rates table (MAERT). Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions. In addition, the following safety valves are exempt from above condition.

Tag Number	Service	Set Pressure	Operating. Pressure
PSV-07709	TK-41	60	40
PSV-07710	TK-41	60	40
PSV-07711	TK-42	60	40
PSV-07712	TK-42	60	40
PSV-07722	TK-43	60	40
PSV-07723	TK-43	60	40
PSV-07724	TK-44	60	40
PSV-07725	TK-44	60	40
PSV-07733	D-77	50	30
PSV-08028	TK-6	71	40
PSV-08029	TK-6	71	40
PSV-08030	TK-11	57	40
PSV-08031	TK-11	57	40
PSV-08124	TK-20X	123	10
PSV-08125	TK-20X	123	10
PSV-12052	T-1205	158	70

Maintenance, Start-Up, and Shutdown Operations

3. This permit authorizes emissions from Emission Point No. 17E01 for the following planned maintenance, start-up, and shutdown activities from the C5 Recovery, Alkylation, MTBE, and C4 recovery areas. The activities include:

   Unit Shutdown/Startup (includes total or partial unit shutdowns/startups) 30 times/year. System and equipment maintenance for the following:

   Heat Exchanger System, Compressor System, Process Tower System, Process Drum System, Process Tanks, Level Instrumentation System, Flow Instrumentation System, Pressure Instrumentation System, Temperature Instrumentation System, Coalescer System, Process Additive System, Analyzer System, Process Pump System, Process Filter System, Reactors and their associated equipment and piping authorized by the amendment application dated July 13, 2011.

These emissions and activities are subject to the maximum allowable emission rates indicated on the MAERT. Any maintenance, start-up, and shutdown activities not in the above list are not authorized by this permit.

Routine maintenance activities attributable to the described equipment may be tracked through work orders or their equivalent. Emissions from these activities shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

4. The process equipment identified in Special Condition (SC) No. 3 shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements:

   A. The process equipment shall be depressurized to a control device, transferred within the process unit, transferred to another process unit, transferred to a pressurized storage tank, or depressurized to a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with volatile organic compounds (VOC) partial pressure less than 0.50 pound per square inch, absolute (psia) at the highest of the actual temperature or 95°F may be opened to atmosphere and drained in accordance with Paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

   B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation, transferred within the process unit, transferred to another process unit, or transferred to a pressurized storage tank. If the VOC partial pressure is greater than 0.50 psi at either the actual temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

   C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel or closed liquid recovery system unless prevented by the physical configuration of the equipment, transferred within the process unit, transferred to another process unit, or transferred to a pressurized or an atmospheric storage tank. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.

   D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

(1) For MSS activities identified as routine maintenance activities in SC No. 3, the following option may be used in lieu of item (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere until the VOC concentration has been verified to be less than 10,000 ppmv or less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement). If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of SC No. 5. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. Documented site procedures used to de-inventory equipment to a control device for safety purposes (e.g., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process;

(2) There is not an available connection to a plant control system (flare); and

(3) There is no more than 50 lbs of air contaminant to be vented to atmosphere during shutdown or start-up, as applicable.

All instances of venting directly to atmosphere per E of this condition must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in SC No. 3.

5. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate RF shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.

(2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five-minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall be recorded and shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured as defined in (3) is less than 80 percent of the range of the tube and is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least two samples taken at least five minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000* mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated within 30 days prior to use with a certified pentane gas standard at 58 percent of the LEL for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A functionality test shall be performed within 24 hours prior to use on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 58 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane.

D. Gas Chromatograph. As an alternative to an instrument/detector, the analysis may be conducted in a laboratory. Bag samples of the gas discharged may be drawn and taken to an onsite laboratory to be analyzed by gas chromatography (GC). A minimum of two bag samples shall be drawn approximately ten minutes apart. A Tedlar bag, or a bag or glass container appropriate for the material to be sampled, shall be used and shall have a valve to seal gas in the bag or container. The samples shall be drawn as follows:

(1) The sample point on the equipment being cleared shall be purged sufficiently to ensure a representative sample at the sample valve.

(2) The sample bag shall be connected directly to the sample valve or to a pump that is connected directly to the sample valve.

(3) The sample valve and sample bag shall be opened to allow the bag to fill to approximately 80% of capacity. The sample connections shall be fitted such that no air is drawn into the sample bag.

(4) The two valves shall then be closed to seal the sample in the bag.

(5) The sample bag shall then be disconnected and placed in a dark container out of direct sunlight for transport to the analyzer.

(6) This process is repeated to collect additional samples.

(7) The sample shall be analyzed within 12 hours of collection.

(8) If condensation is observed in a bag sample, the sampling must be repeated using one of the modified bag sampling procedures in 40 CFR 60, Appendix A, Method 18 Section 8.

(9) At least two samples taken at least five minutes apart must satisfy the following prior to uncontrolled venting.

The laboratory GC shall meet or exceed the requirements of 40 CFR 60, Appendix A, Method 18 Sections 6 (Equipment and Supplies), 7 (Reagents and Standards), 9 (Quality Control), and 10 (Calibration and Standards). The sample shall be analyzed per Section 8.2.1.5 of Method 18, except the analysis of each bag may be performed in duplicate and use gas tight syringe through septums. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting. The recovery study for bag sampling and post analysis calibration is only required the first time a vessel is degassed and analyzed if the procedure meets the accuracy specifications of Method 18 and the analytical equipment is not modified. If the material content, temperature and pressure are the same among multiple vessels when sampling occurs, the post analysis calibration need only be conducted on sample(s) from one representative vessel.

6. This condition applies only to piping and components subject to leak detection and repair monitoring requirements identified in other air permits. Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period:

A. A cap, blind flange, plug, or second valve must be installed on the line or valve; or

B. The open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once within the 72-hour period following the creation of the open-ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other

situations, leaks are indicated by readings 500 ppmv above background and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

7. Additional occurrences of MSS activities authorized by this permit may be authorized under permit by rule only if conducted in compliance with this permit's procedures, emission controls, monitoring, and recordkeeping requirements applicable to the activity.

8. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in this condition. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

   Controlled recovery systems identified in this permit shall be directed to an operating plant process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

   A. Plant Flare System - The plant flare system shall comply with all requirements specified in Special Condition No. 11 of this permit.

   B. Thermal Oxidizer - The thermal oxidizers shall comply with all requirements specified in Special Condition No. 12 of this permit.

9. With the exception of the MAERT limits, these permit conditions become effective 180 days after this permit has been issued. During this period, monitoring and recordkeeping shall satisfy the requirements of SC No. 3. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded.

10. Planned maintenance activities must be conducted in a manner consistent with good practice for minimizing emissions, including the use of air pollution control equipment, practices and processes. All reasonable and practical efforts to comply with SC Nos. 3 through 10 must be used when conducting the planned maintenance activity, until the Commission determines that the efforts are unreasonable or impractical, or that the activity is an unplanned maintenance activity.

Emission Standards and Operating Specifications

11. The East Plant Flare (EPN 17E01) shall be designed and operated in accordance with the following requirements:

    A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the Code of Federal Regulation (40 CFR) § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions.

       The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements.

    B. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared

monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.

C. Each flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam or air assist to the flare.

D. The permit holder shall install a continuous flow monitor and composition analyzer that provide a record of the vent stream flow and composition (total VOC or Btu content) to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average block hourly values of the flow and composition shall be recorded each hour at least 95 percent of the time the flare is operational. The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ±5.0%, temperature monitor shall be ±2.0% at absolute temperature, and pressure monitor shall be ±5.0 mm Hg.

Calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR § 60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

The monitors and analyzers shall operate as required by this section at least 95 percent of the time when the flare is operational, averaged over a rolling 12 month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR § 60.18(f)(4) shall be recorded at least once every 15 minutes at least 95 percent of the time the flare is operational. Block hourly mass emission rates shall be determined and recorded using the above readings and the emission factors (NO_x and CO) used in the permit amendment application, PI-1 dated April 27, 2005.

E. During unit shutdowns and startups, waste gas flow and assist gas shall be monitored when degassing process units to ensure adequate Btu/scf at the flare tip.

F. The East Plant Flare (EPN 17E01) shall operate in accordance with the 40 CFR 63 Subpart YY "National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology Standards Residual Risk and Technology Review for Ethylene Production" signed by the EPA Administrator as a final rule on March 12, 2020, the subsequently promulgated final version of that subpart, and Alternate Method of Control (AMOC) No. 157 issued May 12, 2020. Compliance with the requirements of this paragraph shall begin December 31, 2020 and occur as otherwise specified in the AMOC. Prior to the compliance requirements and schedule of this paragraph, Special Condition Nos. 11.A through 11.E shall apply. **(TBD)**

Thermal Oxidizers

12. The oxidizers shall maintain the VOC concentration in the exhaust gas at less than 10 ppmv on a dry basis, corrected to 3 percent oxygen, or achieve a VOC destruction efficiency greater than 99.9 wt.- %.

    A. The oxidizer firebox exit temperature shall be maintained at not less than 1400°F, the exhaust oxygen concentration at not less than 3 mol.-% while waste gas is fed into the oxidizer.

    B. The oxidizer exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurement device shall reduce the temperature readings to an averaging period of 15 minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

    C. Quality assured (or valid) data must be generated when the oxidizer is operating except during the performance of a daily zero and span check Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the oxidizer operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

    D. As an alternative to operational compliance with paragraph A of this condition, results of stack testing on the thermal oxidizers may be used to demonstrate that their performance meets this condition's exit concentration and destruction efficiency requirements for VOC (i.e., maximum 10 ppmv exit concentration, minimum 99.9 wt.-% DRE).

    The test results may be used to determine the minimum exhaust temperature, minimum exhaust oxygen concentration, and minimum residence time at which compliance with the VOC exit concentration and DRE requirements is demonstrable while waste gas is being fed to the oxidizers.

    Stack VOC concentrations and flow rates shall be measured in accordance with applicable United States Environmental Protection Agency (EPA) Reference Methods. A copy of the test report shall be maintained with the thermal oxidizers, and a summary of the testing results shall be included with the emission calculations.

13. The wastewater system associated with this permit shall be routed to the Environmental Control Unit for treatment or disposal.

14. Fuel for the heaters and flare shall be either sweet natural gas or low sulfur fuel gas containing no more than 5 grains total sulfur and 0.25 grain hydrogen sulfide per 100 dry standard cubic feet. Use of any other fuel will require prior approval of the Executive Director of the Texas Commission on Environmental Quality (TCEQ).

15. Atmospheric relief valves in VOC service that are not equipped with rupture discs shall be checked for leaks on a quarterly basis with an approved gas analyzer. A leak shall be defined as 500 parts per million by volume (ppmv); there shall be no variance for inaccessible valves. All leaking valves

shall be repaired or replaced at the earliest opportunity, but not later than the next scheduled process shutdown.

Piping, Valves, Connectors, Pumps, and Compressors in contact with VOC - 28VHP Program

16. Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment.

    A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch, absolute at 68°F or (2) the operating pressure is at least 5 kilopascals (0.725 pound per square inch) below ambient pressure. Equipment excluded from this condition shall be identified in a list to be made available upon request.

    B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute, American Petroleum Institute, American Society of Mechanical Engineers, or equivalent codes.

    C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.

    D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by 30 TAC Chapter 115, shall be identified in a list to be made available upon request.

    E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

       Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

    F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

       An approved gas analyzer shall conform to requirements listed in 40 CFR § 60.485(a)-(b).

       Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

    G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an

automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired.

I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. The TCEQ Executive Director, at his discretion, may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown.

J. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the TCEQ Executive Director or his designated representative upon request or any other air pollution control agency having jurisdiction over the facility. Records shall indicate appropriate dates, test methods, instrument readings, repair results, and corrective actions taken for all components. Records of physical inspections are not required unless a leak is detected.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352-115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard, or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

28CNTA (Connectors Inspected Annually)

17. In addition to the weekly physical inspection required by Special Condition No. 16, all connectors in gas/vapor and light liquid service shall be monitored annually with an approved gas analyzer in accordance with Items F thru J of Special Condition No. 16. Alternative monitoring frequency schedules (“skip options”) of Title 40 Code of Federal Regulations Part 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, may be used in lieu of the monitoring frequency required by this permit condition. Compliance with this condition does not assure compliance with requirements of applicable state or federal regulation and does not constitute approval of alternative standards for these regulations.

Compliance Assurance Monitoring

18. The following requirements apply to capture systems for EPN 17E01 (East Plant Flare):

A. If the capture system is used to control pollutants other than particulate matter, the permit holder shall either:

(1) Conduct a monthly visual, audio, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or

(2) Conduct an annual inspection of the capture system (in accordance with 40 CFR Part 60, Appendix A, Test Method 21) to verify that it is leak-free. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

B. If the control device has a bypass, it shall comply with either of the following requirements:

(1) The bypass system shall be equipped with a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

(2) The bypass system valves shall be inspected at least once a month to verify the position of the valves, and that the condition of the car seals prevents flow out the bypass.

A deviation shall be reported if the monitoring or inspections indicate bypass of the control device.

C. The date and results of each inspection performed shall be recorded. If the results of any inspection are not satisfactory, the deficiencies shall be recorded and the permit holder shall make every reasonable effort to repair a leaking component within 15 days after the leak is found. If the repair of a component would require a unit shutdown, the repair may be delayed until the next scheduled shutdown.

19. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief valves needed for safety purposes are excluded from the requirements of Special Condition No. 18.

Other Requirements

20. Total production of C4 products, including butadiene and raffinate (butenes and butylenes), shall not exceed representation on the Table 2 which was submitted with the amendment application dated July 13, 2011. Records shall be kept of the annual production rates.

21. The holder of this permit shall maintain records on the operation of the facility for each mode of production. Records shall include (but are not limited to) hours of operation, production rates, hours of operation of each heater unit and type of fuel used in firing each heater, time period pre-regeneration gases are purged to each flare unit, and time period regeneration cycle emits to the atmosphere.

Permit by Rule Authorizations

22. The following sources and/or activities are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106):

Authorization	Source or Activity
PBR Registration Number 96384	Authorized the use of diethyl hydroxylamine (DEHA) as a polymer inhibitor in the C4 Unit.

Netting & Offsets

23. NNSR Permit Number N142M1 is issued/approved based on the requirement that the permit holder offset the project emission increase for facilities authorized by this permit prior to the commencement of operation, through participation in the TCEQ Emission Banking and Trading (EBT) Program in accordance with the rules in 30 TAC Chapter 101, Subchapter H. **(TBD)**

    A. The permit holder shall use 10.9 tons per year (tpy) of NO_X credits to offset the 9.1 tpy NO_X project emission increase for the facilities authorized by this permit at a ratio of 1.2 to 1.0.

    B. Prior to the commencement of operation, the permit holder shall obtain approval from the TCEQ EBT Program for the credits being used and then submit a permit alteration or amendment request to the TCEQ Air Permits Division (and copy the TCEQ Regional Office) to identify approved credits by TCEQ credit certificate number.

Date: TBD

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 2128 and N280

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
EC4D3001	D-3001 Analyzer Vent	VOC	0.19	0.85
EC4PV1304	Analyzer Vent	VOC	0.01	0.01
EC4PV1309	Analyzer Vent	VOC	0.01	0.01
EC4PV1317	Analyzer Vent	VOC	0.01	0.01
EC4PV11205	Analyzer Vent	VOC	0.01	0.01
EC4PV11206	Analyzer Vent	VOC	0.01	0.01
EC4TPV11204	Analyzer Vent	VOC	0.01	0.01
EC4TPV11207	Analyzer Vent	VOC	0.01	0.01
EC4T0	Thermal Oxidizer (R-309)	VOC	0.14	0.63
		NOx	0.32	1.41
		CO	0.77	3.38
		SO_2	0.01	0.01
		PM	0.80	3.48
		PM_{10}	0.80	3.48
		$PM_{2.5}$	0.80	3.48
EF1203	Regeneration Heater (KLP)	VOC	0.03	0.05
		NOx	0.15	0.24
		CO	0.22	0.36
		SO_2	0.01	0.01
		PM	0.04	0.07
		PM_{10}	0.04	0.07
		$PM_{2.5}$	0.04	0.07
EF1202	Thermal Oxidizer (KLP)	VOC	0.57	0.93
		NOx	1.35	2.19

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		CO	3.21	5.20
		SO_2	0.01	0.02
		PM	0.17	0.28
		PM_{10}	0.17	0.28
		$PM_{2.5}$	0.17	0.28
3E06	Regeneration Heater (F-302)	VOC	0.02	0.05
		NO_x	0.63	1.36
		CO	0.38	0.82
		SO_2	0.01	0.01
		PM	0.03	0.07
		PM_{10}	0.03	0.07
		$PM_{2.5}$	0.03	0.07
F3E00, F12E00, F8E00, F1E00, F16E00, F24E00, and F9E00	Equipment Fugitives (East & West Train Service, East Plant Utility Service) (5)	VOC (6)	9.98	39.24
		Acetone	0.09	0.35
17E01	East Plant Flare (7)	VOC (6)	595.30	393.51
		Acetone	14.18	8.07
		NO_x	66.81	51.06
		CO	299.99	249.79
		SO_2	5.52	8.27
ENMSSROUT	Maintenance Emissions (8)	VOC	4.11	0.02

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.

Emission Sources - Maximum Allowable Emission Rates

(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
The Fugitive Emissions EPNs and corresponding source names are as follows: EPNs F3E00 (Unit Fugitives East), F12E00 (C4 Recovery Areas), F8E00 (East Tank Farm), F1E00 (East Utilities Area), F16E00 (East Flare Area), F24E00 (Fuel Tanks Area), and F9E00 (Loading Rack Area).
(6) The allowable emission rates listed for individual VOC species from this Emission Point No. (EPN) are included in the total VOC emission limits.
(7) Flare emission limits include routine operations and Start-up, Shutdown, and Maintenance (MSS) emissions.
(8) Attributable only to clean-out/maintenance of the reactors and their associated piping and equipment authorized in the permit amendment application of July 13, 2011.

Date: TBD

lyondellbasell

November 8, 2019

Certified Mail #7015 0640 0002 0784 88446
EPERMITS 332771

Air Permits Review Division
Air Permits Initial Review Team - MC 161
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: Equistar Chemicals, LP - Channelview Chemical Complex
TCEQ Air Quality Permits No. 2128
Permit Amendment Application
Channelview, Texas Harris County
TCEQ Account ID No. HG-0033-B; RN100542281; CN600124705

Equistar Chemicals, LP (Equistar) operates the East Plant (EP) Flare under Texas Commission on Environmental Quality (TCEQ) Air Quality Permit No. 2128. . Equistar requests the amendment of this permit to update emissions from the Unit Flare.

A hard copy with the original signature of the NSR Workbook General sheet, as well, as, copies of the supporting documentation submitted through STEERS is included in this document. Required TCEQ Forms in the NSR Workbook and air dispersion modeling documentation in the EMEW Workbook have been submitted electronically. Relevant documents including emissions details, process description, flow diagrams, BACT and/or LAER analysis, area map, plot plan are included in this application submittal to assist in TCEQ's review. Equistar is requesting this application review be expedited and is sending the Surcharge Form under separate cover letter to the Cashier's Office. The amendment application fees are sent via wire transfer. If you have any questions regarding this application submittal, please contact Teresa Peneguy at (281) 452-8330.

Sincerely,

Tom Warnement
Environmental Team Leader – Air

Enclosure
cc: Director
Harris County Pollution Control Services
101 South Richey, Suite H
Pasadena, TX 77506
Certified Mail #7015 0640 0002 0784 8453

TCEQ Region 12
~~submitted via STEERS~~
7015 0640 0002 0784 8668
U.S. EPA
R6AirPermitsTX@EPA.gov

Equistar Chemicals, LP
8280 Sheldon Road
Channelview, TX 77530
P.O. Box 777 (77530-0777)
USA

Tel +1 281 862 4000
lyb.com

a LyondellBasell company

NEW SOURCE REVIEW PERMIT AMENDMENT APPLICATION

Permit No. 2128

Submitted by:

Equistar Chemicals, L.P. - Channelview

TCEQ Account Number HG-0033-B

Submitted to:

Texas Commission on Environmental Quality (TCEQ)
Air Permits Initial Review Team (APIRT)
Air Permits Division, MC-161
P.O. Box 13087
Austin, Texas 78711-3087

November 2019

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LIST OF APPENDICES

SECTION 1
INTRODUCTION

Equistar Chemicals, L.P. (Equistar) operates the East Plant Flare System under Texas Commission on Environmental Quality (TCEQ) Air Quality Permit No. 2128.

1.1 Purpose

Equistar requests the amend Air Quality Permit No. 2128, and is submitting this application as required under 30 TAC 116.111. Equistar is modifying the operation of the existing flare to meet future regulatory requirements. Additional natural gas is required to meet the anticipated operating limit to maintain a net heating value of the flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf). The site anticipates future requirements for the combustion zone that match the limits currently identified in 40 CFR 63 Subpart CC. No changes to the operation of the process unit or process vent controlled by the flare are being made with this project. All increases of volatile organic compounds (VOC) emissions will result from the minimal non-methane and non-ethane organics present in the imported natural gas supply. Additionally, the application identifies the sulfur dioxide (SO2) increases resulting from the minimal sulfur present in the natural gas. The combustion products oxides of nitrogen (NOx) and carbon monoxide (CO) that will be generated from the combustion of the additional natural gas are included in the emissions calculations.

The calculations and representations used in this permit amendment are based on best available estimates and should not be considered absolute values for all operating scenarios.

1.2 Permit History

Equistar currently operates the East Plant flare at their Channelview, Texas manufacturing complex under TCEQ Air Permit No. 2128.

The permit 2128 was initially issued in July 1995 for the C4 Recovery Unit. The permit was last renewed on May 9, 2016. The permit was amended April 10, 2018 to include alternative means of compliance for use of a future ground flare.

1.3 Facility Information

The project described in this application includes emissions related to the East Plant Flare System unit at the Equistar Channelview Facility. The regulated entity number for the facility is RN100542281. The Channelview Facility includes multiple process units; however, only the OP2 Unit is affected by this amendment. The Equistar Channelview Facility is located on Sheldon Road, Channelview, TX. All units operate under a single Federal Operating Permit, Permit No. O1426.

Figure 1.1 shows the location of the Channelview Facility on the Area Map. A detailed plot plan of the Facility showing the estimated locations of emissions units at the site is also provided in Figure 1.2.

1.4 PSD and Non-attainment Review

The Prevention of Significant Deterioration (PSD) regulations define a "major modification" as a physical change or a change in the method of operation of a major stationary source that would result in a significant emissions increase and a contemporaneous significant net emissions increase of any regulated pollutant. The project is not a major modification and is not subject to PSD or Non-attainment review for VOC, Carbon Monoxide CO, or Green House Gases (GHG). The project is a major modification for NOx and the associated Table 2F is included in Appendix A.

Table 1-1 PSD and NNSR Review

Contaminants	Emissions Increases	PSD Applicability		Non- Attainment Applicability	
		Limit	Netting?	Limit	Netting?
VOC	0.72	40	No	5	No
SO2	3.37	40	No		
CO	46.44	100	No		
NOx	9.11	40	No	5	Yes

1.5 Application Contents

Key components of this application are organized as follows:

- An area map and a plot plan are provided at the end of Section 1.
- A process description and process flow diagram are included in Section 2.
- Emissions calculations methodologies are included in Section 3.
- Best Available Control Technology (BACT) and Lowest Achievable Emissions Limit (LAER) are addressed in Section 4.
- Regulatory applicability and compliance strategies are addressed in Section 5.
- Appendix A contains completed TCEQ administrative forms, PI-1 signature page from the NSR Workbook and the Expedited Permit Request Form APD-EXP
- Appendix B contains TCEQ Table 2F Project Emissions Increases.
- Appendix C contains emission rate calculations for all Emissions Points.

Figure 1-1
Area Map

Figure 1-1 Area Map
Equistar Chemicals, L.P. - Channelview

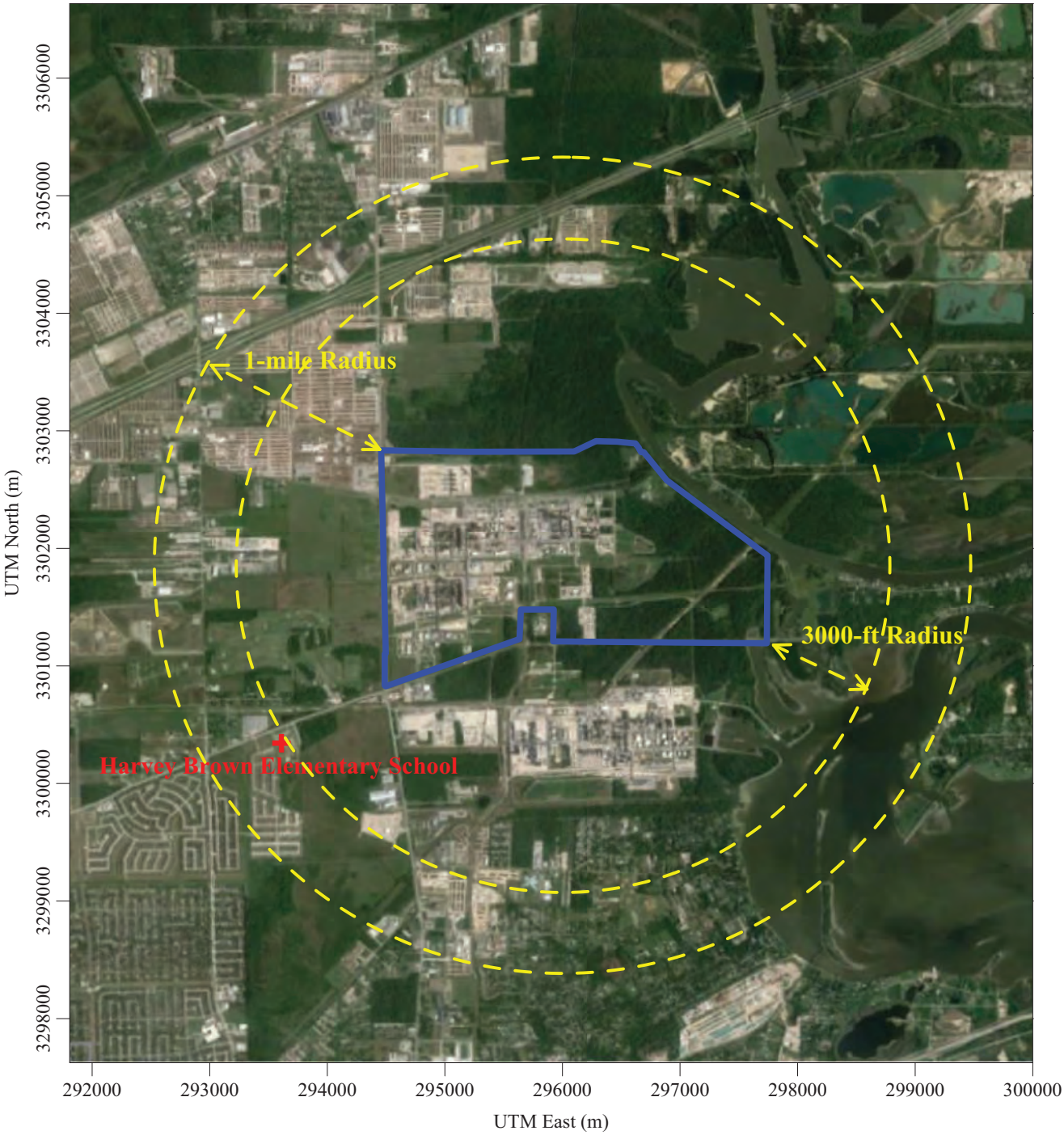
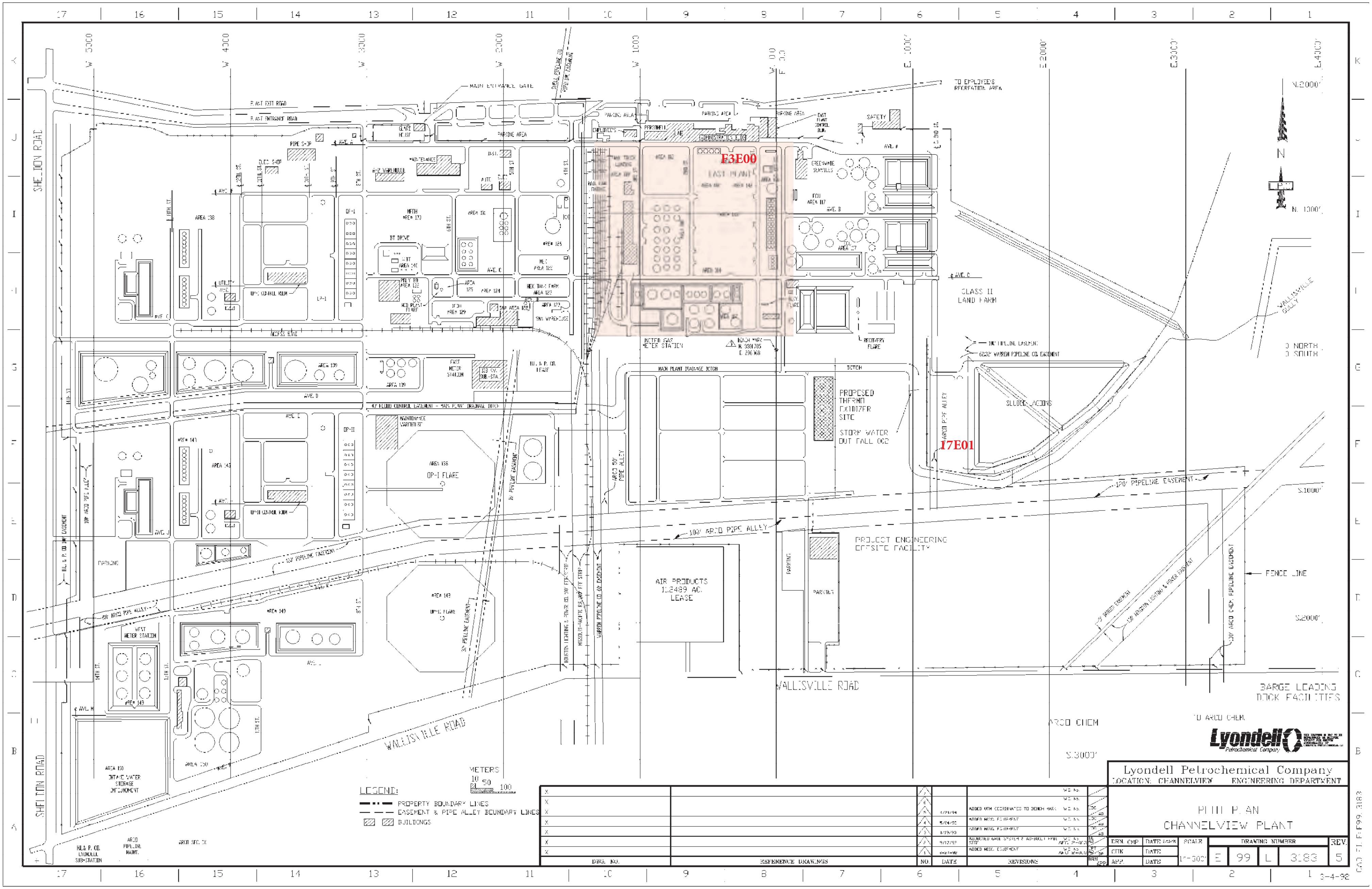


Figure 1-2
Plot Plan


F3E00
I7E01
MAIN ENTRANCE GATE
TO EMPLOYEE'S RECREATION AREA
EAST PLANT
CLASS II LAND FARM
SLUDGE BASINS
PROPOSED THERMAL OXIDIZER SITE
STORM WATER OUT FALL 002
AREA 138
OP-I FLARE
100' ARCO PIPE ALLEY
170' PIPELINE EASEMENT
PROJECT ENGINEERING OFFSITE FACILITY
AIR PRODUCTS 11.2489 AC. LEASE
WALLISVILLE ROAD
SHELDON ROAD
BARGE LOADING DOCK FACILITIES
TO ARCO CHEM.
ARCO CHEM
FENCE LINE
LEGEND:
PROPERTY BOUNDARY LINES
EASEMENT & PIPE ALLEY BOUNDARY LINES
BUILDINGS
METERS
Lyondell Petrochemical Company
LOCATION: CHANNELVIEW ENGINEERING DEPARTMENT
PLOT PLAN
CHANNELVIEW PLANT
SCALE 1"=300'
DRAWING NUMBER E 99 L 3183
REV. 5
3-4-92


Alky Flare 6E07
Google earth
© 2019 Google
N
400 ft

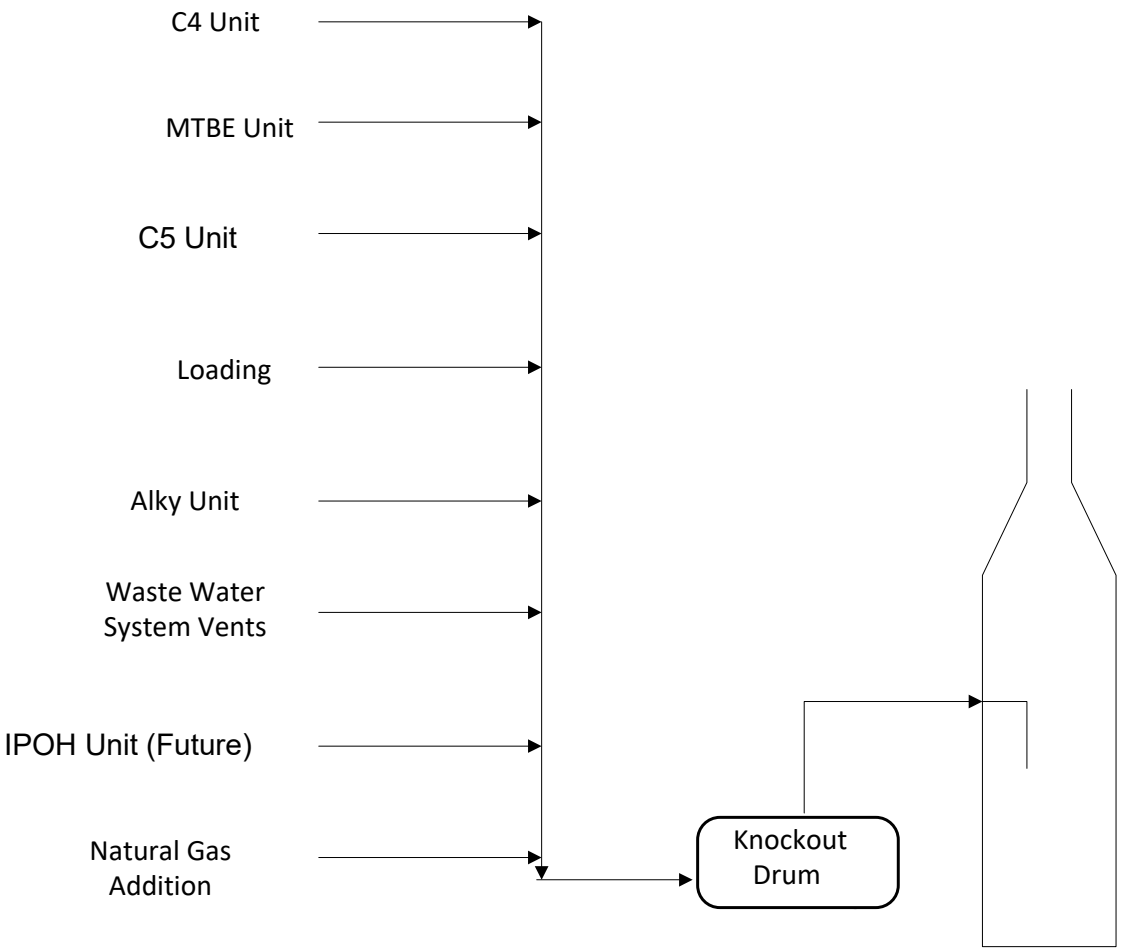
SECTION 2
PROCESS DESCRIPTION

2.1 Process Description

The East Plant flare is included in this permit and is a shared control device for the C4 Butadiene recovery unit (TCEQ Air Permit No. 2128), MTBE unit (TCEQ Air Permit No. 6387), C5 Recovery Unit (TCEQ Air Permit No. 6245), and Alkylation Unit (TCEQ Air Permit No. 24887) as well as associated tank farm, loading facilities and vents from the Wastewater System. The flare processes vents associated with routine operation of each unit as well as maintenance, startup, shutdown, and emergency vents. The flare system consists of multiple flare headers and knockout drums. The headers converge into a single line and final knockout drum. A separate project to route the process vents from the Isopropanol (IPOH) Unit flare to the East Plant Flare was authorized under Standard Permit 157394.

Figure 2-1
East Plant Process Flow Diagram

Figure 2-1: Flare System Process Flow Diagram



SECTION 3
EMISSION CALCULATION METHODOLOGY

This section describes the methodology used to calculate Potential-to-Emit (PTE) emissions from the sources affected by this project using BACT level controls. Emissions calculations are being provided electronically per TCEQ guidance.

3.1 Flare Emissions

The VOC emissions are estimated based on natural gas flow and the emission factor in EPA AP-42 for the combustion of natural gas. The flare is designed to ensure that the flares maintain compliance with NSR Permit No. 2128 and with applicable NSPS and State regulations when in use. NOx and CO emissions are estimated using emissions factors provided in TCEQ publication RG-360A/11, Appendix A: Technical Supplement, Table A-6, "Air Permit Flare Emissions Factors," revised February 2012. The unit operates a steam-assist flare to control vents from the process unit.

3.2 Fugitive Emissions

The TCEQ 28VHP fugitive emissions monitoring program is used to control fugitive emissions from the C4 Unit. The fugitive emissions from equipment included in the PBR being incorporated with this application have been estimated using the 28VHP program control efficiencies. Additionally, a control efficiency of 75% is used for connectors that are monitored annually, and a control efficiency of 97% is used for connectors that are monitored quarterly. The affected process unit contains streams various concentration of ethylene, therefore SOCMI without ethylene factors, SOCMI with ethylene factors, and SOCMI average ethylene factors were used in the fugitive emission estimation calculations. Emissions were calculated per the TCEQ "Technical Guidance Package for Chemical Sources: Equipment Leak Fugitives", issued October 2000.

SECTION 4
BEST AVAILABLE CONTROL TECHNOLOGY AND LOWEST ACHIEVABLE EMISSION REDUCTION

In accordance with 30 TAC Chapter 116, §116.111(a)(2)(C), any new or modified facility must utilize BACT, with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility. Below is a BACT and LAER evaluation of the East Plant Flare and C4 Unit projects that were a modification per 30 TAC 101.

4.1 Flare

The flare meets at least 98% destruction efficiency (DRE) for organic compounds and 99% DRE for organic compounds with 3 carbon or less, which meets BACT. The emission factors for NOx and CO emissions from a steam-assisted flare were used and meet BACT for CO and LAER for NOx. The EPA RACT/BACT/LAER Clearinghouse identified LAER for NOx to be operating flare with good combustion practices in compliance with 40 CFR 60.18 and/or 40 CFR 63.11. The TCEQ published 0.068 lb/MMBtu NOx factor for low BTU steam-assisted flares was the lowest reported emission factor for an elevated flare during the last 10 years. A copy of the results of the Clearinghouse search is attached.

4.2 Fugitives

The unit complies with the 28VHP program for the fugitive components. 28VHP meets the requirements for BACT.

SECTION 5
REGULATORY APPLICABILITY

Pursuant to TCEQ 30 TAC §116.111, Equistar will meet all rules and regulations of the TCEQ and the intent of the TCAA for the emission sources and activities addressed in this permit amendment application, as follows:

- §116.111(a)(1) – A completed Form PI-1 has been signed by an authorized representative of Equistar and is included in Appendix A.
- §116.111(a)(2)(A) through (L) – These items are addressed individually below.
- §116.111(b) – Equistar will comply with applicable 30 TAC 39 and 30 TAC 55 public notice and public participation requirements for this permit amendment application.

5.1 General Application Requirements - §116.111

The emissions associated with the proposed OP2 Unit project will comply with all applicable air quality rules and regulations and with the intent of the TCAA, including protection of the health and the physical property of people, as required by §116.111(a)(2)(A)(i). Following is a summary of rules and regulations as they apply to the proposed project:

30 TAC 101 - General Rules: The facility will be operated in accordance with the General Rules relating to circumvention, nuisance, traffic hazard, notification requirements for major upset, notification requirements for unplanned maintenance, sampling, sampling ports, emission inventory requirements, sampling procedures and terminology, compliance with Environmental Protection Agency (EPA) Standards, emissions fees, and all other applicable General Rules.

30 TAC 111 - Visible Emissions and Particulate Matter: Equistar will comply with all applicable requirements under this chapter.

30 TAC 112 - Sulfur Compounds: Equistar will comply with all applicable requirements under this chapter.

30 TAC 113 - Toxic Materials: TCEQ has incorporated MACT standards (40 CFR 63) into Chapter 113 by reference. The proposed facility will comply with all applicable provisions of Chapter 113 concerning control, recordkeeping, reporting, and monitoring requirements.

30 TAC 114 - Motor Vehicles: This provision of the rule controls the emissions from motor vehicles and does not apply to the facilities under consideration in this permit application.

30 TAC 115 - Volatile Organic Compounds: The proposed facility is located in Harris County and is regulated by the following Rules that are applicable to this permit application:

Subchapter B Division 2 – Vent Gas Control

Equistar will comply with all the applicable control, monitoring, testing, and recordkeeping requirements listed in this subchapter.

Subchapter D Division 3 - Fugitive Emission Control in Petrochemical Process in Ozone Nonattainment Areas

Equistar will comply with all the applicable control, monitoring, inspection, and recordkeeping requirements listed in this subchapter

30 TAC 116 - Permits for New Construction or Modification: Equistar is complying with the requirements of Chapter 116 by submitting this permit application and as outlined below for each of the following sections:

Rule 116.111(a)(2)(A) Protection of public health and welfare

As outlined below, the emissions from Equistar will comply with all air quality rules and regulations and with the intent of the TCAA, including protection of the health and physical property of the people.

Rule 116.111(a)(2)(B) Measurement of Emissions

The proposed facility will have provisions for measuring the emission of significant air contaminants as determined by the Executive Director.

Rule 116.111(a)(2)(C) Best Available Control Technology (BACT)

Section 4 of this application presents a discussion of BACT for the modified facilities associated with this application.

Rule 116.111(a)(2)(D) Federal New Source Performance Standards (NSPS)

Equistar will comply with all applicable 40 CFR Part 60 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(E) National Emission Standards for HAPs (NESHAP)

Equistar will comply with all applicable 40 CFR Part 61 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(F) Maximum Achievable Control Technology (MACT)

Equistar will comply with all applicable 40 CFR Part 63 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(G) Performance Demonstration

The proposed facilities are expected to perform as represented in this application.

Rule 116.111(a)(2)(H) Nonattainment Review

The facility is located in a nonattainment area for VOC and NO_x. See Section 1.4, PSD and Non-attainment Review, for details.

Rule 116.111(a)(2)(I) Prevention of Significant Deterioration (PSD) review

The facility is located in an attainment area for SO2, PM10, CO, and lead.

See Section 1.4, PSD and Non-attainment Review, for details.

Rule 116.111(a)(2)(J) Air Dispersion Modeling

Air dispersion modeling is being submitted with this application.

Rule 116.111(a)(2)(K) Hazardous Air Pollutants

Equistar will comply with all applicable requirements under Subchapter E of this chapter.

Rule 116. 111(a)(2)(L) Mass Cap and Trade Allowances

Equistar Channelview Facility is located in the Houston/Galveston/Brazoria area. Equistar has sufficient NOx allowances to demonstrate compliance with the mass emissions cap and trade program.

30 TAC 117 - Nitrogen Compounds: The provision of the rule does not apply to the proposed facilities considered in this permit application.

30 TAC 118 - Air Pollution Episodes: The facility will be operated in compliance with the rules relating to generalize a localized air pollution episode. An Emissions Reduction Plan is maintained as required by §118.5.

30 TAC 122 - Federal Operating Permits: The Channelview Facility operates under Federal Operating Permit No. O1426. The Title V Permit will be revised to reference the changes in applicable requirements resulting from the amendment to the NSR permit.

APPENDIX A
ADMINISTRATIVE CONSIDERATIONS AND APPLICATION FORMS

Permit Fee Calculation

The amendment application fee is calculated according to 30 TAC §116.141(a), Determination of Fees, which specifies that the fee for an amendment is based on the capital cost of the project. The permit application fee is calculated and summarized on the TCEQ Table 30 included in the NSR Workbook.

The permit amendment fee of $3,000 is provided with this application. The fee payment tracer number for the total amount including both fees is included in this appendix.

Compliance History

Equistar is an existing site greater than 5-years old. Equistar requests that TCEQ compile the history of the site.

Administratively Application Forms

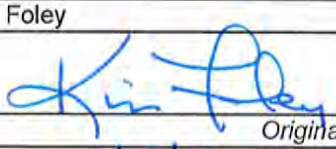
The administrative information has been completed in the NSR Workbook and sent electronically to the Air Permit Initial Review Team. Additional the project EMEW for SCREEN workbook containing the modeling review information has been provided electronically.

I. Is a list of MSS activities attached?	N/A
J. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
K. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Kim Foley
Signature:	
	Original signature is required.
Date:	11/12/19

Basis2 Receipt Report by Endorsement Number

NOV-18-19 04:37 PM

Acct. #: PAF **Account Name:** PERMIT AMENDMENT FEES (AIR)

Paid For	Endors. #	Ref #2	Paid In By	PayTyp	Chk #	Card#	Bank Slip	Tran.Date	Receipt Amnt.
C4 RECOVERY	WRS0019805	2128	LYO EQUISTAR CHE	WT	WIRE		BS00076778	18-NOV-19	$3000.00

Texas Commission on Environmental Quality
Form PI-1 General Application
General

Date: 10/01/2019
Permit #: 2128
Company: Equistar

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Equistar Chemicals, LP

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Kim
Last Name:	Foley
Title:	Site Manager
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-862-5150
Fax Number:	
Email Address:	kim.foley@lyb.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting
Company or Legal Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77503
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	600124705

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	100542281

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: https://www.tceq.texas.gov/agency/financial/fees/delin	No

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Amendment	2128
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Not applicable	
Nonattainment: *Not applicable, Initial, Major Modification*	Initial	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Not applicable	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	Combination (list below)
List the permit number, registration number, and/or PBR number.	83799, 106.263

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No

Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference. At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo:

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	Yes
If yes, list any PBR, standard exemptions, or standard permits that need to be consolidated:	143755, 144050, 157394, 149329, 17E00 only for 150031 & 157735, only 25E01 for 107709 & 153580
If yes, are emission calculations, BACT analysis, and an impacts analysis included for each authorization to be consolidated? **If any required information is not provided, the authorization will be incorporated by reference.**	Yes

E. Associated Federal Operating Permits

Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	Yes
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1426

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Harris
TCEQ Region	Region 12
County attainment status as of Sept. 23, 2019	Serious Ozone nonattainment
Street Address:	8280 Sheldon Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Channelview
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	77530
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	029:49:56
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	095:06:43
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Channelview Facility
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	East Plant C4 Recovery Unit

Are there any schools located within 3,000 feet of the site boundary?	Yes

C. Portable Facility

Permanent or portable facility?	Permanent

D. Industry Type

Principal Company Product/Business:	SOCMI Chemicals

A list of SIC codes can be found at:
https://www.naics.com/sic-codes-industry-drilldown/

Principal SIC code:	2869

NAICS codes and conversions between NAICS and SIC Codes are available at:
https://www.census.gov/eos/www/naics/

Principal NAICS code:	325199

E. State Senator and Representative for this site

This information can be found at (note, the website is not compatible to Internet Explorer):
https://wrm.capitol.texas.gov/

State Senator:	John Whitmire
District:	15
State Representative:	Ana Hernandez
District:	143

V. Project Information

A. Description

Provide a brief description of the project that is requested. (Limited to 500 characters).	Natural gas is being added to flare to meet furture regulatory flame zone heat value requirements for flares.

B. Project Timing

Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).

Projected Start of Construction:	TBD
Projected Start of Operation:	TBD

C. Enforcement Projects

Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No

D. Operating Schedule

Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials

All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)

A. Confidential Application Materials

Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached?	No
https://www.tceq.texas.gov/assets/public/permitting/centralregistry/10400.docx	
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. You do not need to submit calculations for sources which are not changing emission rates with this project. Please note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review. It can be emailed with the submittal of this application workbook.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
H. Is a material balance (Table 2, Form 10155) attached?	Yes

Form APD-EXP Expedited Permitting Request

I. Contact Information	
Company or Other Legal Customer Name: Equistar Chemicals, LP	
Customer Reference Number (CN): 600124705	
Regulated Entity Number (RN): 100542281	
Company Official or Technical Contact Name: Teresa Peneguy	
Phone Number: 281-452-8330	
Email: teresa.peneguy@lyb.com	
II. Project Information	
Facility Type: Channelview Facility, C4 Unit	
Permit Number: 2128	
Project Number: TBD	
III. Economic Justification	
The purpose of the application associated with this request to expedite will benefit the economy of this state or an area of this state.	☒ YES ☐ NO
IV. Delinquent Fees and Penalties	
Applications will not be expedited if any delinquent fees and/or penalties are owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/delin/index.html.	
V. Signature	
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. As the applicant, I commit to fulfilling all expectations of the expedited permitting program and application requirements promptly. Failure to meet any expectation or requirement may cause my application to be removed from the expedited permitting program and possibly voided at the discretion of the TCEQ Executive Director. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.	
Name: Teresa Peneguy	
Signature: Teresa Peneguy	
Date: 11/8/2019	

Reset Form

Basis2 Receipt Report by Endorsement Number

NOV-18-19 04:36 PM

Acct. #: APS **Account Name:** AIR PERMIT EXPEDITED FEE

Paid For	Endors. #	Ref #2	Paid In By	PayTyp	Chk #	Card#	Bank Slip	Tran.Date	Receipt Amnt.
2128/C4 RECOVERY	WRS0019798		LYO EQUISTAR CHE	WT	WIRE		BS00076778	18-NOV-19	$20000.00

APPENDIX B
TECHNICAL APPLICATION TABLES

Technical Application Tables

The following table is included in this appendix:

Table 2F – Project Increases

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	Nox	Permit:	2128
Baseline Period:	N/A new stream	to	

	Affected or Modified Facilities[2]		Permit No.	Actual Emissions[3]	Baseline Emissions[4]	Proposed Emissions[5]	Project Actual Emissions	Difference (B-A)[6]	Correction[7]	Project Increase[8]
	FIN	EPN								
1.	17E01	17E01	2128	0	0	9.11	9.11	9.11		9.11
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
								Page Subtotal[9]		9.11

[1] Individual Table 2F=s should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

APPENDIX C
EMISSION CALCULATIONS

Included in this appendix is the emissions calculations for the additional natural gas to the flare. The flare and fugitive emissions calculations associated with the PBRs and Standard Permits being incorporated with this permit amendment are also included.
included.

Emission Factors

NOx	0.068	lb/MMBtu	TCEQ EI Guidance for Steam-assist flare
CO	0.3465	lb/MMBtu	TCEQ EI Guidance for Steam-assist flare
SO2	5	gr/100 dscf	vendor spec
VOC	5.5	lb/MMscf	AP-42 Natural Gas Combustion
	1020	Btu/scf	

EPN: 17E01

Additional Natural Gas

Avg Natural Gas	30,000	scfh
Max Natural Gas	72,000	scfh

Max Hourly	Current Auth	Nat Gas Increase	Total
	lb/hr	lb/hr	lb/hr
NOx	61.82	4.99	67.11
CO	274.54	25.45	301.49
SO2	-	1.03	-
VOC	594.90	0.40	599.87

Annual	Current Auth	Nat Gas Increase	Total
	tpy	tpy	tpy
NOx	41.95	9.11	51.43
CO	203.35	46.44	251.53
SO2	-	1.88	-
VOC	392.79	0.72	398.85

Sample Calculation

Hourly NOx

72,000 scf	1020 Btu	MMBtu	0.068 lb	=	4.99 lb NOx
hr	scf	10^6 Btu	MMBtu		hr

Annual SO2

30,000 scf	MMscf	5 gr	lb S	2 lb SO2	8760 hr	ton	=	1.88 ton SO2
hr	10^6 scf	100 dscf	7000 gr	lb S	yr	2000 lb		hr

SO2 existing flows convert to 5 S grain/ 100 dscf basis

current auth	5 gr	lb S	2 lb SO2	10^6 scf
0.6 lb SO2/MMscf	100 dscf	7000 gr	lb S	MMscf

Unit	Permit before SP	Factor current	Current lb/hr	Current tpy	Revised lb/hr	Revised tpy
C4 Recovery Nat Gas	2128	0.6 lb/MMscf	0.05	0.05	1.08	1.08
Alky Nat Gas	24887	5 gr/100 dscf	1.08	0.26	1.08	0.26
IPOH Nat Gas	49130	0.6 lb/MMscf	0.01	0.02	0.24	0.48
Alky Process	24887	historical S content	2.09	4.57	2.09	4.57
Add Nat Gas		5 gr/100 dscf			1.03	1.88
			3.22	4.89	5.52	8.26

Alky Process vent with S (no change in representation or calculation methodology)

Process flow to flare	7,450	lb/hr
	32,631,000	lb/yr
S content	140	ppmw
SO2 lb / S lb	2	
SO2 lb/hr	2.09	lb/hr
SO2 tpy	4.57	tpy

	lb/hr	tpy
Current Auth	3.23	4.90
Increase	2.29	3.37
Proposed Allowable	**5.52**	**8.26**

Authorization	Project Area	lb/hr					tpy					
		VOC	Acetone	Nox	SO2	CO	VOC	Acetone	Nox	SO2	CO	
2128	Effective Permit	478.41	0.27	46.69	0.05	197.41	255.46	1.13	28.85	0.05	136.64	
143753	Alky process vent to EP Std Permit	549.75	0.27	56.35	3.22	246.66	340.43	1.13	36.22	4.88	174.18	
157394	Standard Permit Auth.	638.57	11.18	68.22	39.74	307.19	419.74	8.18	48.38	37.34	235.98	
	IPOH Flare (IPOH vent 49130)	41.63	10.12	4.42	0.01	22.52	50.80	6.29	5.42	0.02	27.62	
	IPOH Flare (SMA vent 24677)	4.57	0.04	0.29		1.50	5.34	0.05	0.37		1.74	
	Poly BD	42.62	0.75	7.16	36.51	36.51	23.17	0.71	6.37	32.44	32.44	
	To be incorporated	591.38	10.39	60.77	3.23	269.18	391.23	7.42	41.64	4.90	201.80	adjust allowable since PolyBD flare vent will not be moved and SMA unit shutdown
107709	IPOH vent	1.01	3.61	0.89		4.53	0.16	0.57	0.22		1.10	
153580	IPOH vent	2.39	0.18	0.15		0.79	1.15	0.08	0.07		0.37	
150031	Alky vent	0.06		0.01		0.02	0.24		0.02		0.08	
157735	Alky vent	0.06		0.00		0.02	0.01		0.00		0.00	
	to be consolidated	116.49	13.91	15.13	3.18	77.13	137.33	6.94	13.10	4.85	66.71	
	Total Allowable	594.90	14.18	61.82	3.23	274.54	392.79	8.07	41.95	4.90	203.35	
	PBR only	3.52	3.79	1.05	0.00	5.36	1.56	0.65	0.31	0.00	1.55	
	Alky only	71.34	0.00	9.66	3.17	49.25	84.97	0.00	7.37	4.83	37.54	
	IPOH only	41.63	10.12	4.42	0.01	22.52	50.80	6.29	5.42	0.02	27.62	
	Flare Project	0.40		4.99	2.29	25.45	0.72		9.11	3.37	46.44	
	Proposed Allowable	**595.30**	**14.18**	**66.81**	**5.52**	**299.99**	**393.51**	**8.07**	**51.06**	**8.27**	**249.79**	

Comments:
IPOH process vent has 2 operating scenarios - with and without the reactor operating
For modeling the speciated chemicals were evaluated based on highest concentration for each operating case
However total VOC added to MAERT based on Operating Scenario 1 and not sum of speciated chemicals

	lb/hr	tpy
Operating Scena	41.63	50.8
Operating Scena	30.94	34.19

		lb/hr	tpy
Total VOC	**wt%**	**0.14**	**0.60**
1,3-BUTADIENE	75%	0.10	0.45
I-BUTANE	100%	0.14	0.60
N-BUTANE	100%	0.14	0.60
BUTENE-1	100%	0.14	0.60
ISOBUTYLENE	100%	0.14	0.60
T-BUTENE-2	100%	0.14	0.60
C-BUTENE-2	100%	0.14	0.60
1,2-BUTADIENE	100%	0.14	0.60

Component Class	Chemical State	SOCMI without C_2 Factor[1]	28VHP Control Efficiency[2]	Count	Emissions Estimate (lb/hr)	Emissions Estimate (tpy)
Flange / Connector	Gas / Vapor	0.0029	97%	138	0.01	0.05
Flange / Connector	Light Liquid	0.0005	97%	751	0.01	0.05
Other1 Component	Gas / Vapor	0.0029	75%	55	0.04	0.17
Other1 Component	Light Liquid	0.0005	75%	301	0.04	0.16
Pumps	Light Liquid	0.0386	100%	5	0.00	0.00
Relief Valves	Gas / Vapor	0.2293	100%	9	0.00	0.00
Relief Valves	Light Liquid	0.0007	100%	5	0.00	0.00
Other2 Components	Gas / Vapor	0.0058	75%	0	0.00	0.00
Other2 Components	Light Liquid	0.001	75%	5	0.00	0.01
Other3 Components	Light Liquid	0.0005	75%	9	0.00	0.00
Valves	Gas / Vapor	0.0089	97%	55	0.01	0.06
Valves	Light Liquid	0.0007	97%	301	0.01	0.03
		Total Component Cou		1634		
		Total VOC Emissions			0.12	0.54

Fugitives in <10% VOC Service

Component Class	Chemical State	SOCMI without C_2 Factor[1]	28VHP Control Efficiency	Count	Emissions Estimate (lb/hr)	Emissions Estimate (tpy)
Valves	Light Liquid	0.0007	30%	40	0.02	0.09
Flange / Connector	Light Liquid	0.0005	30%	100	0.04	0.15
Other1 Component	Light Liquid	0.0005	30%	40	0.01	0.06
Pumps	Light Liquid	0.0386	30%	2	0.05	0.24
Other2 Components	Light Liquid	0.001	30%	0	0.00	0.00
		Total Component Cou		182		
		Total Emissions			0.12	0.54
		Total VOC Emissions			0.01	0.05

APPENDIX D
PBR AND STANDARD PERMIT APPROVAL LETTER

Included in this appendix is the TCEQ approval letters for the following Permit By Rules (PBR):

- PBR Authorization No. 107709 for increase in vent to flare from IPOH Unit;
- PBR Authorization No. 153580 for increase in vent to flare from IPOH Unit;
- PBR Authorization No. 150031 for increase in vent to flare from Alky Unit;
- PBR Authorization No. 157735 for increase in vent to flare from Alky Unit;
- PBR Authorization No. 149329 for fugitive components;
- PBR Authorization No. 155486 for fugitive components.

Included in this appendix is the TCEQ approval letter for the following Standard Permit (SP):

- Standard Permit Authorization No. 143753 for moving Alky vents to EP Flare;
- Standard Permit Authorization No. 157394 for moving IPOH vents to EP Flare;
- Standard Permit Authorization No. 144030 for replacement of the EP Flare tip.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 12, 2013

MS COURTNEY RUTH
SITE MANAGER
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Permit by Rule Registration Number:	107709
Location/City/County:	8280 Sheldon Rd Bldg. 1, Channelview, Harris County
Project Description/Unit:	Revision of the emissions from the reactor system and collateral emissions from affected units / Isopropanol Unit
Regulated Entity Number:	RN100542281
Customer Reference Number:	CN600124705
New or Existing Site:	Existing
Affected Permit (if applicable):	49130
Renewal Date (if applicable):	None

Equistar Chemicals, LP has certified the revised emissions associated with the addition of a reactor system and collateral emissions from affected units in the Isopropanol Unit at the Channelview Complex under Title 30 Texas Administrative Code §§ 106.261 and 106.262. Emissions should be incorporated into Permit Number 49130 at next amendment or renewal. For rule information see:
www.tceq.texas.gov/permitting/air/nav/numerical_index.html

Planned MSS emissions (EPN ENMSSROUT) for clearing the reactor and ancillary equipment have been reviewed. These authorized MSS emissions are included on the emissions table. No other planned MSS emissions will be authorized under this registration. The company is also reminded that these facilities may be subject to and must comply with other state and federal air quality requirements.

This certification is taken under the authority delegated by the Executive Director of the TCEQ. If you have questions, please contact Ms. Nancy Akintan at (713) 767-3773.

Sincerely,

Anne M. Inman, P.E., Manager
Rule Registrations Section
Air Permits Division

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston

Project Number: 194582

Emission Sources - Certified Emission Rates

Registration Number 107709

This table lists the certified emission rates and all sources of air contaminants on the applicant's property covered by this registration. The emission rates shown are those derived from information submitted as part of the registration for PBR.

ESTIMATED EMISSIONS															
EPN / Emission Source	**Specific VOC**	**VOC**		**NOx**		**CO**		**PM_{10}**		**$PM_{2.5}$**		**SO_2**		**Other**	
		lbs/hr	**tpy**	**lbs/hr**	**tpy**	**lbs/hr**	**tpy**	**lbs/hr**	**tpy**	**lbs/hr**	**tpy**	**lbs/hr**	**tpy**	**lbs/hr**	**tpy**
F26E00/IPOH Unit Fugitives	Acetone	0.01	0.06											0.05	0.20
31E05/Tank TK-3105	Acetone	-	0.45											0.39	0.28
31E06/Tank TK-3106		-	0.11												
31E07/Tank TK-3107		-	0.11												
31E08/Tank TK-3108		0.07	0.15												
31E09/Tank TK-3109		0.03	0.08												
31E10/Tank TK-3110	Acetone	0.03	-											0.12	0.18
ETK3123/Tank TK-3123		-	0.07												
ETK3124/Tank TK-3124		-	0.21												
25E01/IPOH Flare-FL-2501	Acetone	1.01	0.16	0.89	0.22	4.53	1.10							3.61	0.57
ENMSSROUT/MSS	Acetone	0.02	<0.01											0.08	<0.01
26PVSP2643/IPOH Vapor Recovery Skid		-	0.14												
TOTAL EMISSIONS (TPY):		--	1.54	-	0.22	-	1.10							-	1.34
MAXIMUM OPERATING SCHEDULE:		**Hours/Day**		**Days/Week**		**Weeks/Year**		**Hours/Year**	8760						

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 29, 2018

MRS TERESA PENEGUY
SITE MANAGER
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Permit by Rule Registration Number:	153580
Equistar Chemicals, LP	
Isopropanol Unit (IPOH)	
Channelview, Harris County	
Regulated Entity Number:	RN100542281
Customer Reference Number:	CN600124705
Affected Permit:	49130

This is in response to your certification Form PI-7 CERT regarding the change in feed quality and volume to the Isopropanol Unit (IPOH) at the Equistar Chemicals Channelview Complex located at 8280 Sheldon Rd, Channelview, Harris County.

Equistar Chemicals, LP has certified the emissions under Title 30 Texas Administrative Code (TAC) §§ 106.261 and 106.262. For rule information see:
www.tceq.texas.gov/permitting/air/nav/numerical_index.html

As referenced in 30 TAC § 116.116(d)(2), all changes authorized under Chapter 106 to a permitted facility shall be incorporated into the NSR Permit No. 49130 when it is amended or renewed. The company is also reminded that these facilities may be subject to and must comply with other state and federal air quality requirements.

If you need further information or have questions, please contact Ms. Nancy Akintan at (713) 767-3773 or write to the Texas Commission on Environmental Quality (TCEQ), Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under the authority delegated by the Executive Director of the TCEQ.

Sincerely,

Mark T. Meyer

Mark Meyer, Manager
Rule Registrations Section
Air Permits Division

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston

Project Number: 290841

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 1, 2018

MRS TERESA PENEGUY
ENVIRONMENTAL PERMITTING
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Permit by Rule Registration Number:	150031
Equistar Chemicals, LP	
Equistar Chemicals Channelview Complex	
Channelview, Harris County	
Regulated Entity Number:	RN100542281
Customer Reference Number:	CN600124705
Affected Permit:	2128 and 24887

This is in response to your certification Form PI-7 CERT regarding the addition of analyzers a the Alkylation Unit at the Equistar Chemicals Channelview Complex located at 8280 Sheldon Rd, Channelview, Harris County. Equistar Chemicals, LP has certified the emissions under Title 30 Texas Administrative Code (TAC) § 106.261 and 106.262. For rule information see: www.tceq.texas.gov/permitting/air/nav/numerical_index.html

As referenced in 30 TAC § 116.116(d)(2), all changes authorized under Chapter 106 to a permitted facility shall be incorporated into NSR Permit Nos. 2128 and 24887 when next amended or renewed. The company is also reminded that these facilities may be subject to and must comply with other state and federal air quality requirements.

If you need further information or have questions, please contact Mr. James Nolan at (512) 239-6634 or write to the Texas Commission on Environmental Quality (TCEQ), Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under the authority delegated by the Executive Director of the TCEQ.

Sincerely,

Samuel Short, Manager
Rule Registrations Section
Air Permits Division

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston

Project Number: 280189

Emission Sources - Certified Emission Rates

Registration Number 150031

This table lists the certified emission rates and all sources of air contaminants on the applicant's property covered by this registration. The emission rates shown are those derived from information submitted as part of the registration for PBR.

ESTIMATED EMISSIONS													
EPN / Emission Source		VOC		NOx		CO		PM_{10}		SO_2			
		lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
17E01	East Plant Flare (Increases)	0.06	0.24	0.01	0.02	0.02	0.08						
F4E00	Alky Process Fugitives (Increases)	<0.01	0.02										
TOTAL EMISSIONS (TPY):			**0.26**		**0.02**		**0.08**						
MAXIMUM OPERATING SCHEDULE:		Hours/Day			Days/Week			Weeks/Year			Hours/Year		8,760

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 21, 2019

Mr. Tom Warnement
Environmental Manager - Air
Equistar Chemicals, LP
PO BOX 777
Channelview, TX 77530

Permit by Rule Registration Number: 157735
Equistar Chemicals, LP
Project Description/Unit: Equistar Chemicals Channelview Complex
City: Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705
30 TAC § 106.261
30 TAC § 106.262
Affected Permit(s): 2128,24887

This is in response to your Permit by Rule (PBR) registration submitted through the online ePermits process for your facility located near Channelview, Harris County. Based on the information submitted and review completed by the Rule Registration Section, this is an acknowledgement that Equistar Chemicals, LP has certified emissions associated with Equistar Chemicals Channelview Complex under the Permit By Rule(s) listed above. For rule information see: www.tceq.texas.gov/permitting/air/nav/numerical_index.html. Records must be maintained in accordance with Title 30 Texas Administrative Code § 106.8 to demonstrate compliance with the claimed PBRs.

As referenced in 30 TAC § 116.116(d)(2), all changes authorized under Chapter 106 to a permitted facility shall be incorporated into the NSR Permit No. 2128,24887 when it is amended or renewed.

As a reminder, regardless of the authorization mechanism, all facilities must be in compliance and operate in accordance with all rules and regulations of the TCEQ and the U.S. Environmental Protection Agency. Facilities not operating in accordance with these rules and regulations, or that misrepresented or failed to fully disclose all relevant facts in obtaining this authorization may be subject to formal enforcement action.

This action is taken under authority delegated by the Executive Director of the TCEQ. If you need further information or have questions, please contact the Rule Registrations Section at (512) 239-1250 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Mark T. Meyer

Mark Meyer, Manager

Rule Registrations Section
Air Permits Division
Texas Commission on Environmental Quality

[Project Number: 304301]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 18, 2018

MS KIM FOLEY
SITE MANAGER
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Permit by Rule Registration Number:	149329
Equistar Chemicals, LP	
New Fugitive Components	
Channelview, Harris County	
Regulated Entity Number:	RN100542281
Customer Reference Number:	CN600124705
Affected Permit:	2128

This is in response to your certification Form PI-7 CERT regarding the New Fugitive Components located at 8280 Sheldon Rd, Channelview, Harris County.
Equistar Chemicals, LP has certified the emissions under Title 30 Texas Administrative Code (TAC) §§ 106.261 and 106.262. For rule information see:
www.tceq.texas.gov/permitting/air/nav/numerical_index.html
As referenced in 30 TAC § 116.116(d)(2), all changes authorized under Chapter 106 to a permitted facility shall be incorporated into the NSR Permit No. 2128 when it is amended or renewed.

The company is also reminded that these facilities may be subject to and must comply with other state and federal air quality requirements.

If you need further information or have questions, please contact Mr. Jonathan Wilmoth, P.E. at (512) 239-0567 or write to the Texas Commission on Environmental Quality (TCEQ), Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under the authority delegated by the Executive Director of the TCEQ.

Sincerely,

Samuel Short, Manager
Rule Registrations Section
Air Permits Division

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston
Project Number: 277983

Emission Sources - Certified Emission Rates

Registration Number 149329

This table lists the certified emission rates and all sources of air contaminants on the applicant's property covered by this registration. The emission rates shown are those derived from information submitted as part of the registration for PBR.

ESTIMATED EMISSIONS														
EPN / Emission Source	VOC		NOx		CO		PM_{10}		1, 3-Butadiene		Butenes		Beta-Butylene	
	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
F3E00, F12E00, F8E00, F1E00, F16E00, F24E00, F9E00 / Unit Equipment Fugitives (East and West Train Service, and East Plant Utility Areas)	0.11	0.48							0.08	0.36	0.11	0.48	0.11	0.48
TOTAL EMISSIONS (TPY):		0.48								0.36		0.48		0.48

MAXIMUM OPERATING SCHEDULE:	Hours/Day		Days/Week		Weeks/Year		Hours/Year	8,760

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

March 14, 2019

Mr. Thomas Warnement
Environmental Permitting
Equistar Chemicals, LP
PO BOX 777
Channelview, TX 77530

Permit by Rule Registration Number: 155486
Equistar Chemicals, LP
Project Description/Unit: Equistar Chemicals Channelview Complex
City: Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705
30 TAC § 106.261
30 TAC § 106.262
Affected Permit(s): 2128

This is in response to your Permit by Rule (PBR) registration submitted through the online ePermits process for your facility located near Channelview, Harris County. Based on the information submitted and review completed by the Rule Registration Section, this is an acknowledgement that Equistar Chemicals, LP has certified emissions associated with Equistar Chemicals Channelview Complex under the Permit By Rule(s) listed above. For rule information see: www.tceq.texas.gov/permitting/air/nav/numerical_index.html. Records must be maintained in accordance with Title 30 Texas Administrative Code § 106.8 to demonstrate compliance with the claimed PBRs.

As referenced in 30 TAC § 116.116(d)(2), all changes authorized under Chapter 106 to a permitted facility shall be incorporated into the NSR Permit No. 2128 when it is amended or renewed.

As a reminder, regardless of the authorization mechanism, all facilities must be in compliance and operate in accordance with all rules and regulations of the TCEQ and the U.S. Environmental Protection Agency. Facilities not operating in accordance with these rules and regulations, or that misrepresented or failed to fully disclose all relevant facts in obtaining this authorization may be subject to formal enforcement action.

This action is taken under authority delegated by the Executive Director of the TCEQ. If you need further information or have questions, please contact the Rule Registrations Section at (512) 239-1250 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Mark T. Meyer

Mark Meyer, Manager

Rule Registrations Section
Air Permits Division
Texas Commission on Environmental Quality

[Project Number: 296191]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 19, 2016

MR TODD MONETTE
SITE MANAGER
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Re: Pollution Control Projects Air Quality Standard Permit
(Effective 2/9/2011)
Standard Permit Registration Number: 143753
Standard Permit Expiration Date: December 14, 2026
Equistar Chemicals, LP
Equistar Chemicals Channelview Complex
Affected Permit: 2128 and 24887
Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705
Account Number: HG-0033-B

Dear Mr. Monette:

This is in response to your Form PI-1S (Air Quality Standard Permit for Pollution Control Projects) regarding the proposed construction to be located at 8280 Sheldon Rd., Channelview, Harris County. We understand that this registration is for emissions associated with the Alky Flare (Emission Point Number [EPN] 6E07 [Permit Number 24887]) being transferred to the East Plant Flare (EPN 17E01, Permit Number 2128). We also understand that the Alky Flare will be taken out of service permanently.

After evaluation of the information you submitted, the Texas Commission on Environmental Quality (TCEQ) has determined that your proposed emissions are authorized by this standard permit pursuant to Title 30 Texas Administrative Code § 116.602 (30 TAC § 116.602) if constructed and operated as represented in your registration. This standard permit was issued under the Texas Clean Air Act (TCAA) § 382.011, which authorizes the commission to control the quality of the state's air; TCAA § 381.023, which authorizes the commission to issue orders necessary to carry out the policy and purposes of the TCAA; and § 382.05195, which authorizes the commission to issue standard permits. Authorized emissions are listed on the attached table.

You must begin construction or modification of these facilities in accordance with this standard permit no later than 18 months after the date of this letter. After completion of construction or modification, the appropriate TCEQ Regional Office must be notified prior to commencing operation and the facility shall be operated in compliance with all applicable conditions of the claimed standard permit.

Re: Standard Permit Registration Number 143753

You are reminded that 30 TAC § 116.615 requires that any construction or change authorized by this standard permit be administratively incorporated into the affected facilities' permit(s) at the next amendment or renewal.

You are also reminded that these facilities must be in compliance with all rules and regulations of the TCEQ and of the U.S. Environmental Protection Agency at all times.

If you need further information or have any questions, please contact Mr. Marc Sturdivant at (512) 239-1313 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Kate Brown

Kate Brown, Manager
Energy/Combustion New Source Review Permits Section
Air Permits Division
Texas Commission on Environmental Quality

cc: Director, Harris County, Pollution Control Services, Pasadena

Project Number: 260978

Standard Permit Maximum Emission Rates Table
Permit Number 143753

The facilities and emissions included in this table have been represented and reviewed as the maximum emissions authorized by this standard permit registration.

Emission Point No.	Source Name	NSR Permit	Pollutant	Authorized PCP Emissions	
				lbs/hr	tpy
17E01	East Plant Flare	2128	VOC	549.75	340.43
			Acetone	0.27	1.13
			NO_x	56.35	36.22
			SO_2	3.22	4.88
			CO	246.66	174.18

VOC - volatile organic compounds
NO_x - total oxides of nitrogen
CO - carbon monoxide
SO_2 - sulfur dioxide

Date: December 19, 2016

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 11, 2019

MR TOM WARNEMENT
ENVIRONMENTAL MANAGER - AIR
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Re: Pollution Control Projects Air Quality Standard Permit
(Effective 2/9/2011)
Standard Permit Registration Number: 157394
Standard Permit Expiration Date: July 11, 2029
Equistar Chemicals LP
Equistar Chemicals Channelview Complex
Affected Permit: 2128, 22779, 24677, 24887, 49130
Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705

Dear Mr. Warnement:

This is in response to your Form PI-1S (Air Quality Standard Permit for Pollution Control Projects) regarding the proposed construction to be located at 8280 Sheldon Rd, Channelview, Harris. We understand that this registration is associated with the transfer of emissions from the IPOH Flare (EPN: 25E01) and the PolyBD Flare (EPN: 25E02) to the East Plant Flare (EPN: 17E01). Standard permit No. 143753 will be voided upon issuance of this standard permit. The emissions authorized by standard permit 143753 are included in the allowable emission rates for this standard permit.

After evaluation of the information you submitted, the Texas Commission on Environmental Quality (TCEQ) has determined that your proposed emissions are authorized by this standard permit pursuant to Title 30 Texas Administrative Code § 116.602 (30 TAC § 116.602) if constructed and operated as represented in your registration. This standard permit was issued under the Texas Clean Air Act (TCAA) § 382.011, which authorizes the commission to control the quality of the state's air; TCAA § 381.023, which authorizes the commission to issue orders necessary to carry out the policy and purposes of the TCAA; and § 382.05195, which authorizes the commission to issue standard permits. Authorized emissions are listed on the attached table.

You must begin construction or modification of these facilities in accordance with this standard permit no later than 18 months after the date of this letter. After completion of construction or modification, the appropriate TCEQ Regional Office must be notified prior to commencing operation and the facility shall be operated in compliance with all applicable conditions of the claimed standard permit.

You are reminded that 30 TAC § 116.615 requires that any construction or change authorized by this standard permit be administratively incorporated into the affected facilities' permit(s) at the next amendment or renewal.

You are also reminded that these facilities must comply with all rules and regulations of the TCEQ and of the U.S. Environmental Protection Agency at all times.

Re: Standard Permit Registration Number 157394

If you need further information or have any questions, please contact Mr. Guillermo Reyes, P.E. at (512) 239-5716 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Mark T. Meyer

Mark Meyer, Manager
Rule Registrations Section
Air Permits Division
Texas Commission on Environmental Quality

cc: Director, Harris County, Pollution Control Services, Pasadena
Air Section Manager, Region 12 - Houston

Project Number: 303062

Standard Permit Maximum Emission Rates Table
Permit Number 157394

The facilities and emissions included in this table have been represented and reviewed as the maximum emissions authorized by this standard permit registration.

Emission Point No.	Source Name	NSR Permit	Pollutant	Authorized PCP Emissions	
				lbs/hr	tpy
17E01	East Plant Flare	2128	VOC	638.57	419.74
			NOx	68.22	48.38
			CO	307.19	235.98
			SO_2	39.74	37.34
			Acetone	11.18	8.18

VOC - volatile organic compounds
NO_x - total oxides of nitrogen
CO - carbon monoxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$ as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
SO_2 - sulfur dioxide

**Fugitive emissions are an estimate only and should not be considered as a maximum allowable

Date: July 11, 2019

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 13, 2017

MR TODD MONETTE
SITE MANAGER
EQUISTAR CHEMICALS LP
PO BOX 777
CHANNELVIEW TX 77530-0777

Re: Pollution Control Projects Air Quality Standard Permit
(Effective 2/9/2011)
Standard Permit Registration Number: 144030
Standard Permit Expiration Date: January 13, 2027
Equistar Chemicals, LP
Equistar Chemicals Channelview Complex
Affected Permit: 2128
Channelview, Harris County
Regulated Entity Number: RN100542281
Customer Reference Number: CN600124705
Account Number: HG-0033-B

Dear Mr. Monette:

This is in response to your Form PI-1S (Air Quality Standard Permit for Pollution Control Projects) regarding the proposed construction to be located at 8280 Sheldon Road, Channelview, Harris County. We understand that this registration is for emissions associated with replacing the flare tip of the East Plant Flare Emission Point Number 17E01. You have represented that there is no increase or change in the character of the emissions.

After evaluation of the information you submitted, the Texas Commission on Environmental Quality (TCEQ) has determined that your proposed emissions are authorized by this standard permit pursuant to Title 30 Texas Administrative Code § 116.602 (30 TAC § 116.602) if constructed and operated as represented in your registration. This standard permit was issued under the Texas Clean Air Act (TCAA) § 382.011, which authorizes the commission to control the quality of the state's air; TCAA § 381.023, which authorizes the commission to issue orders necessary to carry out the policy and purposes of the TCAA; and § 382.05195, which authorizes the commission to issue standard permits. Authorized emissions are listed on the attached table.

You must begin construction or modification of these facilities in accordance with this standard permit no later than 18 months after the date of this letter. After completion of construction or modification, the appropriate TCEQ Regional Office must be notified prior to commencing operation and the facility shall be operated in compliance with all applicable conditions of the claimed standard permit.

Re: Standard Permit Registration Number 144030

You are reminded that 30 TAC § 116.615 requires that any construction or change authorized by this standard permit be administratively incorporated into the affected facilities' permit(s) at the next amendment or renewal.

You are also reminded that these facilities must be in compliance with all rules and regulations of the TCEQ and of the U.S. Environmental Protection Agency at all times.

If you need further information or have any questions, please contact Mr. Michael Cheek, P.E. at (512) 239-4936 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Kate Brown

Kate Brown, Manager
Energy/Combustion New Source Review Permits Section
Air Permits Division
Texas Commission on Environmental Quality

cc: Director, Harris County, Pollution Control Services, Pasadena

Project Number: 261649

Standard Permit Maximum Emission Rates Table
Permit Number 144030

The facilities and emissions included in this table have been represented and reviewed as the maximum emissions authorized by this standard permit registration.

Emission Point No.	Source Name	NSR Permit	Pollutant	Authorized PCP Emissions	
				lbs/hr	tpy
17E01	East Plant Flare	2128	VOC	478.41	255.46
			C_3H_6O	0.27	1.13
			NO_x	46.69	28.85
			CO	197.41	136.64
			SO_2	0.05	0.05

Flare emission limits include routine operations and Startup, Shutdown, and Maintenance (MSS) emissions.

VOC - volatile organic compounds
NO_x - total oxides of nitrogen
CO - carbon monoxide
SO_2 - sulfur dioxide
C_3H_6O - acetone

Date: January 13, 2017

I. Additional Questions for Specific NSR Minor Permit Actions

V. Nonattainment Permits	
Complete the offsets section of the Federal Applicability sheet of this workbook.	Yes
Does the application contain a detailed LAER analysis? (attachment or as notes on the BACT sheet of this workbook)	Yes
Does the application contain an analysis of alternative sites, sizes, production processes, and control techniques for the proposed source? The analysis must demonstrate that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that locati+A124on.	Yes

VIII. Federal Regulatory Questions
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.
A. Title 40 CFR Part 60

Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	A
B. Title 40 CFR Part 61	
Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	A, FF
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	A, F, G, H

IX. Emissions Review

A. Impacts Analysis

Any change that results in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet of this workbook.

Does this project require an impacts analysis?	Yes

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade

Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	Yes
Is Mass Emissions Cap and Trade applicable to the new or modified facilities?	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: 10/01/2019
Permit #: 2128
Company: Equistar

Permit primary industry (must be selected for workbook to function)

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
Not New/Modified	Yes	EC4D3001	EC4D3001	D-3001 Analyzer Vent	VOC	0.19	0.85	0	0	Process Vent
Not New/Modified	Yes	EC4PVJ304	EC4PVJ304	Analyzer Vent	VOC	0.0003	0.001	0	0	Process Vent
Not New/Modified	Yes	EC4PVJ309	EC4PVJ309	Analyzer Vent	VOC	0.0004	0.002	0	0	Process Vent
Not New/Modified	Yes	EC4PVJ317	EC4PVJ317	Analyzer Vent	VOC	0.002	0.01	0	0	Process Vent
Not New/Modified	Yes	EC4PVJ1205	EC4PVJ1205	Analyzer Vent	VOC	0.002	0.01	0	0	Process Vent
Not New/Modified	Yes	EC4PVJ1206	EC4PVJ1206	Analyzer Vent	VOC	0.001	0.004	0	0	Process Vent
Not New/Modified	Yes	EMTPVJ1204	EMTPVJ1204	Analyzer Vent	VOC	0.0003	0.001	0	0	Process Vent
Not New/Modified	Yes	EMTPVJ1207	EMTPVJ1207	Analyzer Vent	VOC	0.0004	0.002	0	0	Process Vent
Not New/Modified	Yes	EC4TO	EC4TO	Thermal Oxidizer (R-309)	VOC	0.14	0.63	0	0	Control: Oxidizer: Thermal
Not New/Modified	Yes				NOx	0.32	1.41	0	0	
Not New/Modified	Yes				CO	0.77	3.38	0	0	
Not New/Modified	Yes				SO2	0.003	0.01	0	0	
Not New/Modified	Yes				PM	0.8	3.48	0	0	
Not New/Modified	Yes	F1203	EF1203	Regengeration Heater (KLP)	VOC	0.03	0.05	0	0	Heater
Not New/Modified	Yes				NOx	0.15	0.24	0	0	
Not New/Modified	Yes				CO	0.22	0.36	0	0	
Not New/Modified	Yes				SO2	0.003	0.01	0	0	
Not New/Modified	Yes				PM	0.04	0.07	0	0	
Not New/Modified	Yes	F1202	EF1202	Thermal Oxidizer	VOC	0.57	0.93	0	0	Control: Oxidizer: Thermal
Not New/Modified	Yes				NOx	1.35	2.19	0	0	
Not New/Modified	Yes				CO	3.21	5.2	0	0	
Not New/Modified	Yes				SO2	0.01	0.02	0	0	
Not New/Modified	Yes				PM	0.17	0.28	0	0	
Not New/Modified	Yes	03HTF302	3E06	Regeneration Heater (F302)	VOC	0.02	0.05	0	0	Heater
Not New/Modified	Yes				NOx	0.63	1.36	0	0	
Not New/Modified	Yes				CO	0.38	0.82	0	0	
Not New/Modified	Yes				SO2	0.000003	0.00001	0	0	
Not New/Modified	Yes				PM	0.03	0.07	0	0	
Consolidate	Yes	03FG00000, 08FG00000, 01FG00000, 16FG00000, 24FG00000, 09FG00000	F3E00, F12E00, F8E00, F1E00, F16E00, F24E00, F9E00	Unit Equipment Fugitives (East and West Train Service, and East Plant Utility Areas)	VOC	9.98	39.24	*0.0001*	*0.0001*	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes				Acetone	0.09	0.35	0	0	
New/Modified	Yes	17FL1701, 17FL1701F, 17FL1701P	17E01	East Plant Flare	VOC	595.3	393.51	*0.4*	*0.72*	Control: Flare
New/Modified	Yes				Acetone	14.18	8.07	0	0	
New/Modified	Yes				NOx	66.81	51.06	*4.99*	*9.11*	
New/Modified	Yes				SO2	5.52	8.27	*2.29*	*3.37*	
New/Modified	Yes				CO	299.99	249.79	*25.45*	*46.44*	
Not New/Modified	Yes	ENMSSROUT	ENMSSROUT	Maintenance Emissions (KLP)	VOC	4.11	0.02	0	0	MSS Activities

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: 10/01/2019
Permit #: 2128
Company: Equistar

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
EC4D3001	No	15	295983	3302167								
EC4PVJ304	No	15	295993	3302166								
EC4PVJ309	No	15	295904	3302203								
EC4PVJ317	No	15	295929	3302272								
EC4PVJ1205	No	15	295810	3302271								
EC4PVJ1206	No	15	295817	3302325								
EMTPVJ1204	No	15	295786	3302353								
EMTPVJ1207	No	15	295831	3302256								
EC4TO	No	15	295879	3302320	50		1.67	51.4	1400			
EF1203	No	15	295782	3302267	60		1.92		600			
EF1202	No	15	295771	3302265	75		4	57	1600			
3E06	No	15	295867	3302320	68		2.5	4.2	465			
F3E00, F12E00, F8E00, F1E00, F16E00, F24E00, F9E00	Yes											
17E01	Yes											
ENMSSROUT	No	15	295752	3302259						235	220	

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: 10/01/2019
Permit #: 2128
Company: Equistar

I. Public Notice Applicability	
A. Application Type	
Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (a new criteria pollutant or a new VOC or PM species)?	No
Is there a new air contaminant in this application?	No

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

Notes:

1. Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10,and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.

2. All renewals require public notice.

This row is optional. If you do not think the table below accurately represents public notice applicability increases for your project, provide discussion here (1000 characters).	
Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: 10/01/2019
Permit #: 2128
Company: Equistar

Pollutant	Current Long-Term (tpy)	Consolidated Emissions (tpy)	Proposed Long-Term (tpy)	Project Change in Allowable (tpy)	PN Threshold	Notice required?
VOC	296.66	137.93	435.31	0.72	5	No
PM	3.90	0.00	3.90	0.00	5	No
PM_{10}	0.00	0.00	0.00	0.00	5	No
$PM_{2.5}$	0.00	0.00	0.00	0.00	5	No
NO_x	34.05	13.10	56.26	9.11	5	Yes
CO	146.40	66.71	259.55	46.44	50	No
SO_2	0.09	4.85	8.31	3.37	10	No
Pb	0.00	0.00	0.00	0.00	0.6	No
Acetone	1.48	6.94	8.42	-4.44089E-16	5	No

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

C. Is public notice required for this project as represented in this workbook? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
D. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting

Company Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting
Company Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

B. Public place

Place a copy of the full application (including all of this workbook and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	North Channel Branch Library
Physical Address:	15741 Wallisville Road
Address Line 2:	
City:	Houston
ZIP Code:	77049
County:	Harris
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program?	Spanish

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Not applicable

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at:

https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Lina Hidalgo
Mailing Address:	1001 Preston, Suite 911
Address Line 2:	
City:	Houston
State:	Texas
ZIP Code:	77002

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Adrian
Last Name:	Garcia
Title:	County Commissioner
Mailing Address:	
Address Line 2:	4500 E Sam Houston PKWY S Ste 215
City:	Pasadena
State:	Texas
ZIP Code:	77505
Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

Date: 10/01/2019
Permit #: 2128
Company: Equistar

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Harris
This project will be located in an area that is in attainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	Ozone - Serious
Determination:	**This project will be located in a county with a Serious Ozone nonattainment classification, and the project will be reviewed under a Serious Ozone nonattainment classification. Complete the nonattainment section below and provide an analysis with the application.**

II. PSD and GHG PSD Applicability Summary			
Is netting required for the PSD analysis for this project?			**No**
Pollutant	**Project Increase**	**Threshold**	**PSD Review Required?**
CO	46.44	100	No
NO_x	9.11	40	No
PM	0	25	No
PM_{10}	0	15	No
$PM_{2.5}$	0	10	No
SO_2	3.37	40	No
Pb			
H_2S			
TRS			
Reduced sulfur compounds (including H_2S)			
H_2SO_4			
Fluoride (excluding HF)			
CO2e			

III. Nonattainment Applicability Summary			
Is netting required for the nonattainment analysis for this project?			**Yes**
If yes, the project increases listed below should be after netting has been performed. Attach the netting information to the application.			
Pollutant	**Project Increase (after netting)**	**Threshold**	**NA Review Required?**

Ozone (as VOC)	0.72	40	No
Ozone (as NO_x)	9.11	5	Yes

IV. Offset Summary (for Nonattainment Permits)

Pollutant	Offset Ratio	Offset Quantity Required (tpy)	Where is the offset coming from?
Ozone (as NO_x)	1.20 : 1	10.932	Purchase

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

Date: 10/01/2019
Permit #: 2128
Company: Equistar

I. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option. Then skip sections II and III.	No
Select Application Type	Major Application

II. Direct Costs - Non-Renewal	
Type of Cost	**Amount**
Process and control equipment not previously owned by the applicant and not currently authorized under this chapter.	$0.00
Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements.	$0.00
Freight charges.	$0.00
Site preparation, including demolition, construction of fences, outdoor lighting, road, and parking areas.	$0.00
Installation, including foundations, erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration, and process control equipment.	$0.00
Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures.	$0.00
Ambient air monitoring network.	$0.00
Sub-Total:	$0.00

III. Indirect Costs - Non-Renewal	
Type of Cost	**Amount**
Final engineering design and supervision, and administrative overhead.	$0.00
Construction expense, including construction liaison, securing local building permits, insurance, temporary construction facilities, and construction clean-up.	$0.00
Contractor's fee and overhead.	$0.00
Sub-Total:	$0.00

IV. Calculations - Non-Renewal
For GHG permits: A single PSD fee (calculated on the capital cost of the project per 30 TAC § 116.163) will be required for all of the associated permitting actions for a GHG PSD project. Other NSR permit fees related to the project that have already been remitted to the TCEQ can be subtracted when determining the appropriate fee to submit with the GHG PSD application. Identify these other fees in the GHG PSD permit application.
In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Estimated Capital Cost		**Major Application Fee**

Less than $300,000		$3,000 (minimum fee)
$300,000 - $7,500,000		1.0% of capital cost
$300,000 - $25,000,000		N/A
Greater than $7,500,000		$75,000 (maximum fee)
Greater than $25,000,000		N/A

Your estimated capital cost:	**$0.00**	Minimum fee applies.
Permit Application Fee:		**$3,000.00**

VI. Total Fees	
Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$3,000.00
Total	$3,000.00

VII. Payment Information	
A. Payment One (required)	
Was the fee paid online?	No
Enter the fee amount:	$ 3,000.00
Enter the check, money order, ePay Voucher, or other transaction number:	WRS0019798
Enter the Company name as it appears on the check:	Equistar Chemicals LP
C. Total Paid	**$3,000.00**

VIII. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Impacts

Date: 10/01/2019
Permit #: 2128
Company: Equistar

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
Ozone	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
NOx	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
CO	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
SO2	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
PM	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Acetone	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: 10/01/2019
Permit #: 2128
Company: Equistar

Plant Type	Current Tier I BACT	Confirm	Additional Notes
Plant fuel gas facility	Maximum short term H2S emissions: 0.1 gr/dscf or 160 ppmv. Maximum annual H2S	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
Consolidate	03FG00000, 08FG00000, 01FG00000, 16FG00000, 24FG00000, 09FG00000	Fugitives: Piping and Equipment Leak	VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	28VHP
			Acetone	See additional notes:	Yes	Monitoring Per 28VHP
			MSS	Same as normal operation BACT requirements.	Yes	No changes to MSS
New/Modified	17FL1701, 17FL1701F, 17FL1701P	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	Meets 98% control efficiency and 99% for compounds up to 3 carbons
			Acetone	See additional notes:	Yes	Meets 98% control efficiency
			NOx	Provide emission factor used and reference.	Yes	Use TCEQ factor of 0.068 lb/MMBtu for low Btu, steam-assisted flare
			SO2	Provide emission factor used and reference.	Yes	Natural gas has less than 5 grains/100 dscf
			CO	Provide emission factor used and reference.	Yes	Use TCEQ factor of 0.3465 lb/MMBtu for low Btu, steam-assisted flare
			MSS	Same as normal operation BACT requirements.	Yes	No changes to MSS

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: 10/01/2019
Permit #: 2128
Company: Equistar

Monitoring

This sheet provides the minimum acceptable requirements to demonstrate compliance through monitoring for each pollutant proposed to be emitted from each FIN. This sheet also includes measuring techniques for sources of significant emissions in the project.

Instructions:
1. The unit types listed under Unit Type (column B) include all new, modified, consolidated, and/or renewed sources as indicated on the "Unit Types - Emission Rates" sheet. Each new, modified, consolidated, and/or renewed source must address how compliance will be demonstrated.
2. The pollutants listed in Pollutant (column C) include the pollutants indicated on the "Unit Types - Emission Rates" sheet.

Monitoring (30 TAC § 116.111(a)(2)(G))
3. The minimum acceptable monitoring is automatically populated for each unit type and pollutant.
   - Additional monitoring may be required, particularly for Title V sources, and will be included in the NSR and/or Title V permits.
4. Fully expand the Minimum Monitoring Requirements (column D) by increasing the row heights so all text is visible. (Place the cursor on the bottom of the number line to the far left of the screen, click and drag downward until all text is visible.)
5. Review the monitoring and confirm that you will meet all representations listed on the sheet and any additional attachments by entering or selecting "Yes" in Confirm (column E).
6. Add additional notes as necessary in Additional Notes for Monitoring (column F), limited to 500 characters or fewer. Examples include the following:
   - Proposed monitoring for pollutants or units that list "See additional notes:";
   - Details requested in the populated data;
   - Alternative monitoring you are proposing; and
   - Any additional information relevant to the minimization of emissions.
7. Cap EPNs do not need monitoring (leave those rows blank).

Measurement of Emissions (30 TAC § 116.111(a)(2)(B))
Note: this section will be greyed out if this project does not require PSD or nonattainment review, as represented on the General sheet.
7. For each pollutant with a project increase **greater** than the PSD significant emission rate, select the proposed measurement technique using the dropdown (column G).
8. For each pollutant with a project increase **less** than the PSD significant emission rate: leave blank.
9. If selecting "other", provide details in Additional Notes for Measuring (column H).
10. You may also use the Additional Notes for Measuring (column H) to provide more details on a selection.

Click here to return to Cover Sheet.

Important Note: The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours. All required records must be maintained in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application. The site must make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner. The applicant must comply with any additional recordkeeping requirements specified in special conditions in the permit. All records must be retained in the file for at least two years following the date that the information or data is obtained. Some permits are required to maintain records for five years. [30 TAC § 116.115(b)(2)(E)]

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
03FG00000, 08F0	Fugitives: Piping and	VOC	Use EPA Method 21 to monitor for leaks from seals on pumps,	Yes	Flow 28VHP monitoring requirements		
		Acetone	See additional notes:	Yes	Flow 28VHP monitoring requirements		
17FL1701, 17FL1	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and	Yes	Vent flow meter and stream analyzer		
		Acetone	See additional notes:	Yes	Vent flow meter and stream analyzer		
		NOx	Pilot flame presence monitored continuously. Waste gas flow and	Yes	Vent flow meter and stream analyzer		
		SO2	Pilot flame presence monitored continuously. Waste gas flow and	Yes	vendor specification		
		CO	Pilot flame presence monitored continuously. Waste gas flow and	Yes	Vent flow meter and stream analyzer		

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: 10/01/2019
Permit #: 2128
Company: Equistar

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	Email	11/19/2019
Hard copy of the General sheet with original (ink) signature	Mail	11/19/2019
Professional Engineer Seal	Not applicable	
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form		
Area map	Mail	11/19/2019
Plot plan	Mail	11/19/2019
Process description	Mail	11/19/2019
Process flow diagram	Mail	11/19/2019
List of MSS activities		
State regulatory requirements discussion	Mail	11/19/2019
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	Mail	11/19/2019
Netting analysis (if required) - Tables 3F and 4F as needed	Not applicable	
D. Technical Information		
BACT discussion, if additional details are attached	Email	11/19/2019
Monitoring information, if additional details are attached	Email	11/19/2019
Material Balance (if applicable)	Not applicable	
Calculations	Email	11/19/2019
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	Email	11/19/2019
Electronic Modeling Evaluation Workbook: SCREEN3	Email	11/19/2019
Electronic Modeling Evaluation Workbook: NonSCREEN3	Not applicable	
PSD modeling protocol		
F. Additional Attachments		
Expedited Fee	Mail	11/19/2019

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

EMEW Version No.: Version 2.2

Purpose Statement:
This workbook is completed by the applicant and submitted to the Texas Commission on Environmental Quality (TCEQ), specifically, the Air Dispersion Modeling Team (ADMT) for review. This workbook is a tool available for all projects using SCREEN3 for an impacts review and its use is required starting June 1, 2019. Provide the workbook with the permit application submittal for any Minor New Source Review project requiring a modeling impacts demonstration.

This workbook follows the guidance outlined in the Air Quality Modeling Guidelines (APDG 6232, September 2018) which can be found here:

https://www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf

Workbook Instructions:
1. Save a copy of the workbook to your computer or desktop prior to entering data.
2. Complete all required sections leaving no blanks. You may use the "tab" button or the arrow keys to move to the next available cell. Use "enter" to move down a line. Note: drop-downs are case-sensitive.
3. Fill in the workbook in order, do not skip around as this will cause errors. Use caution if changing a previously entered entry.
4. Not applicable sections of this workbook will be hidden as data is entered. For example, answering "No" to "Is downwash applicable? " will hide these sections of the workbook required only for downwash entry.
5. Email the workbook electronic file (EMEW) and any attachments to the Air Permits Initial Review Team. The subject line should read "Company Name - Permit Number (if known) - NSR Permit Application". Email address:

apirt@tceq.texas.gov

6. If printing the EMEW, follow the directions below to create a workbook header.
7. Printing the EMEW is not required for submitting to the Air Permits Division (APD); however, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required. To print the workbook, follow the instructions below. Please be aware, several sheets contain large amounts of data and caution should be taken if printing, such as the Speciated Emissions sheet.
8. Updates may be necessary throughout the review process. Updated workbooks must be submitted in electronic format to APD. For submittal to regional offices, local programs, or public places you only have to print sheets that had updates. Be sure to change the headers accordingly.

Note: Since this will be part of the permit application, follow the instructions in the Form PI-1 General Application on where to send copies of your EMEW and permit application. The NSR Application Workbook can be found here:
https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/nsrapp-tools.html

Create Headers Before Printing:
1. Right-click one of the workbook's sheet tabs and "Select All Sheets."
2. Enter the "Page Layout View" by using the navigation ribbon's View > Workbook Views > Page Layout, or by clicking the page layout icon in the lower-right corner of Excel.
3. Add the date, company name, and permit number (if known) to the upper-right header. Note that this may take up to a minute to update your spreadsheet. Select any tab to continue working on the spreadsheet.

Printing Tips:
While APD does not need a hard copy of the full workbook, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required.
1. The default printing setup for each sheet in the workbook is set for the TCEQ preferred format. The print areas are set up to not include the instructions on each sheet.
2. You have access to change all printing settings to fit your needs and printed font size. Some common options include:
   -Change what area you are printing (whole active sheet or a selection);
   -Change the orientation (portrait or landscape);
   -Change the margin size; and
   -Change the scaling (all columns on one sheet, full size, your own custom selection, etc.).

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Acknowledgement:	Select from the drop down:
I acknowledge that I am submitting an authorized TCEQ Electronic Modeling Evaluation Workbook and any necessary attachments. Except for inputting the requested data, I have not changed the TCEQ Electronic Modeling Evaluation Workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	Choose an item

Administrative Information:	
Data Type:	**Facility Information:**
Project Number (6 Digits):	
Permit Number:	2128
Regulated Entity ID (9 Digits):	100542281
Facility Name:	Equistar Channelview
Facility Address:	8280 Sheldon Road
Facility County (select one):	Harris
Company Name:	Equistar Chemicals, LP
Company Contact Name:	Teresa Peneguy
Company Contact Number:	281-452-8330
Company Contact Email:	teresa.peneguy@lyb.com
Modeling Contact Name:	Teresa Peneguy
Modeling Company Name, as applicable:	LyondellBasell
Modeling Contact Number:	281-452-8330
Modeling Contact Email:	teresa.peneguy@lyb.com
New/Existing Site (select one):	Existing Site
Modeling Date (MM/DD/YYYY):	10/10/2019
UTM Zone (select one):	15

Sheet Instructions: Indicate in the Table of Contents which sections are applicable and included for this modeling demonstration. Select "X" from the drop down if the item below is included in the workbook. Note: This workbook is only for SCREEN3 analyses. Please use the separate Electronic Modeling Evaluation Workbook (EMEW) for the following air dispersion models: AERSCREEN, ISC/ISCPrime, and/or AERMOD.

Table of Contents

Section:	Sheet Title *(Click to jump to specific sheet):*	Select an X from the dropdown menu if included:
1	General	
2	Model Options	X
3	Building Downwash	X
4	Flare Source Parameters	X
5	Point Source Parameters	
6	Area Source Parameters	X
7	Volume Source Calculations	
8	Volume Source Parameters	
9	Point and Flare Source Emissions	X
10	Area Source Emissions	X
11	Volume Source Emissions	
12	Speciated Emissions	X
13	Intermittent Sources	
14	Modeling Scenarios	X
15	Monitor Calculations	
16	Background Justification	
17	Secondary PM2.5 Analysis (MERPs calculations)	
18	NAAQS/State Property Line (SPL) Modeling Results	X
19	Unit Impact Multipliers	X
20	Health Effects Modeling Results	X
21	Modeling File Names	X
22	Speciated Chemicals	X

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Included Attachments Instructions: The following are attachments that must be included with any modeling analysis. If providing the plot plan and area map with the permit application, ensure there is also a copy with the EMEW. The copy can be electronic.	**Select an X from the dropdown menu if included:**
Plot Plan:	
Instructions: Mark all that apply in the attached plot plan. For larger properties or dense source areas, provide multiple zoomed in plot plans that are legible.	
Property/Fence Lines all visible and marked.	X
North arrow included.	X
Clearly marked scale.	X
All sources and buildings are clearly labeled.	X
Area Map:	
Instructions: Mark all that apply in the attached area map.	
Annotate schools within 3,000ft of source's nearest property line.	X
All property lines are included.	X
Non-industrial receptors are identified.	X
Additional Attachments (as applicable): *Note: These are just a few examples of attachments that may need to be included. There may be others depending on the scope of the modeling analysis.*	**Select an X from the dropdown menu if included:**
Single Property Line Designation	
Include Agreement, Order, and map defining each petitioner.	X
Post Processing using Unit Impact Multipliers (UIMs)	
Include documentation on any calculations used with the UIMs (i.e., Step 3 of the MERA).	
Modeling Techniques	
Provide documentation on modeling techniques indicated in the workbook.	
Other Attachments *Provide a list in the box below of additional attachments being provided that are not listed above:*	
	Choose an item

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

I. Project Information
A. Project Overview: In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*
Natural gas is being added to flare to meet furture regulatory flame zone heat value requirements for flares.

II. Air Dispersion Modeling Preliminary Information			
Instructions: Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around. For larger text boxes, double click to type or insert text.			
A. Building Downwash			
No	Is downwash applicable? *(Select "Yes" or "No")*		
B. Type of Analyses: (Select "X" in all that apply)			
X	Minor NSR NAAQS	X	State Property Line
X	Health Effects		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

C. Constituents Evaluating: (Select "X" in all that apply)			
NAAQS: List all pollutants that require an modeling review. *(Select "X" in all that apply)*			
X	SO_2		PM_{10}
X	CO		$PM_{2.5}$
	Pb	X	NO_2
Both			Identify which averaging periods are being evaluated for NO_2.
Tier 2: 0.9			Identify the 1-hr NO_2 tier used for SCREEN3.
Tier 2: 0.9			Identify the annual NO_2 tier used for SCREEN3.
State Property Line: List all pollutants that require an modeling review. *(Select "X" in all that apply)*			
	H_2S	X	SO_2
	H_2SO_4		
Health Effects: Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.			
D. Dispersion Options: *Select "X" in the box to select an option. Note: if selecting both options, be sure to explain the reasoning for this in the box below.*			
X	Urban		
	Rural		
Provide justification on the dispersion option selected above in the following box:			
Located in municipality of Channelview Texas			

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

E. Meteorological Data:	
Select Meteorological Dataset Modeled:	Full Meteorological Data

F. Receptor Grid:
Describe the receptor grid being modeled in the following text box:
10 m - 25000 m array; at ground level

G. Terrain:	
Select the terrain option being modeled:	Flat
For justification on terrain selection, fill in the box below:	
Land is costal and flat	

H. Modeling Techniques: *Briefly describe any modeling techniques used for the SCREEN3 analyses. Provide additional attachments, if needed, to support the analyses.*
Modelled emissions equivalent to 1 lb/hr increase; Fugitives modelled at 1 m, used 0.6 factor per TCEQ memo for sources < 10 m height

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Flare Source Parameters

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Height [m]	Heat Release (cal/s)	Description
17E01	17E01	Routine	296237.00	3301999.00	68.58	5700315.61	EP Flare
25E01	25E01	Routine	295302.00	3302050.00	18.29	1224876.96	IPOH Flare
6E07	6E07	Routine	296021.00	3302011.00	38.10	2393262.01	Alky Flare

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Area Source Parameters

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Modeled Release Height [m]	Longer Side Length X [m]	Shorter Side Length Y [m]	Area Source Size Justification
F3E00	EP Fug	Routine	295755.00	3302070.00	1.00	101.27	94.85	Area of most impacted area

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Area Source Parameters

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Area Source Release Height Justification	Source Description
F3E00	EP Fug	source at ground level	fugitive emission sources

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Point + Flare Emissions

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]
17E01	17E01	Routine	Generic	1-hr			No	1.00
	25E01		Generic	1-hr			No	1.00
	6E07		Generic	1-hr			No	1.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Point + Flare Emissions

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use	Downwash Structure Considered	Distance to Ambient Air (m)
17E01	17E01	1 lb/hr	No			832.00
	25E01	1 lb/hr	No			829.00
	6E07	1 lb/hr	No		BLD1151	800.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Area Source Emissions

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Averaging time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]
F3E00	EP Fug	Routine	Generic	1-hr			No	1.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Area Source Emissions

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use	Distance to Ambient Air (m)
F3E00	EP Fug	maximum	Yes	0.6 per TCEQ memo	554.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Speciated Emissions

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Speciated Emissions by Model ID

CAS #	Chemical Species	Other Species	Short-Term ESL (µg/m³)	Long-Term ESL (µg/m³)
106-99-0	1,3-butadiene		510	9.9
16747-50-5	11-methyl-1-ethylcyclopentane		3500	350
560-21-4	2,3,3-trimethylpentane		5600	540
565-75-3	2,3,4-trimethylpentane		5600	540
589-43-5	2,4-dimethylhexane		5600	540
592-13-2	2,5-dimethylhexane		5600	540
106-97-8	n-butane		66000	7100
540-84-1	2,2,4-trimethylpentane		5600	540
78-78-4	isopentane		59000	7100
591-76-4	2-methylhexane		10000	2700
107-83-5	2-methylpentane		5600	200
111-84-2	n-nonane		4800	450
75-07-0	acetaldehyde		120	45
75-65-0	tert-butyl alcohol		620	62
115-11-7	isobutene		180000	32000
67-56-1	methanol		3900	2100
558-30-5	isobutylene oxide		60	6
67-63-0	isopropanol		4920	492
78-93-3	methyl ethyl ketone		18000	2600
123-38-6	propionaldehyde		92	40
75-56-9	propylene oxide		70	7
67-64-1	acetone		7800	4800
67-56-1	methanol		3900	2100
71-43-2	benzene		170	4.5
590-18-1	cis-2-butene		10000	480
74-98-6	propane		Simple Asphyxiant	Simple Asphyxiant
75-28-5	isobutane		23000	7100
624-64-6	trans-2-butene		10000	480
1634-04-4	methyl tert-butyl ether		630	180
79-20-9	methyl acetate		6000	600
589-34-4	3-methylhexane		10000	2700

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Speciated Emissions

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

107-31-3	methyl formate		1200	120
75-05-8	acetonitrile		340	34
74-86-2	acetylene		26600	2660
590-19-2	1,2-butadiene		1100	9.9
106-98-9	1-butene		19000	1600
563-46-2	2-methyl-1-butene		290	480
513-35-9	2-methyl-2-butene		10000	480
563-45-1	3-methyl-1-butene		290	2200
627-20-3	cis-2-pentene		10000	480
542-92-7	cyclopentadiene		2000	200
287-92-3	cyclopentane		17000	1700
142-29-0	cyclopentene		3700	370
503-17-3	2-butyne		16400	1640
74-85-1	ethylene		1400	34
78-79-5	isoprene		130	120
463-82-1	neopentane		59000	7100
591-93-5	1,4-pentadiene		2000	200
109-66-0	n-pentane		59000	7100
109-67-1	1-pentene		290	480
1574-41-0	cis-piperylene		2000	200
115-07-1	propylene		Simple Asphyxiant	Simple Asphyxiant
108-88-3	toluene		4500	1200
100-40-3	4-vinylcyclohexene		510	97
534-15-6	methylacetaldehyde		450	45
75-83-2	2,2-dimethylbutane		5600	200
598-53-8	methyl isopropyl ether		2500	250
115-10-6	dimethyl ether		19000	1900
75-21-8	ethylene oxide		20	2
630-08-0	carbon monoxide		Must Meet NAAQS	Must Meet NAAQS
3710-84-7	N,N'-diethylhydroxylamine		400	40
98-29-3	tert-butyl catechol		20	2

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Combined Emissions

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

EPN	Model ID	Modeling scenario	Pollutant	Modeled Averaging time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]	Downwash Structure Considered
17E01	17E01	Routine	Generic	1-hr	NAAQS	SIL Analysis	No	Flare	1.00	
0	25E01	0	Generic	1-hr	NAAQS	SIL Analysis	No	Flare	1.00	
0	6E07	0	Generic	1-hr			No	Flare	1.00	BLD1151
F3E00	EP Fug	Routine	Generic	1-hr	Health Effects	Project-Wide	No	Area	1.00	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Modeling Scenarios

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Modeling Scenario	Scenario Description:
Routine	Flare at maximum heat release potential (not used for analysis since results in lower GLCmax)

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	-0.46000	14.3
H_2SO_4	1-hr		1
H_2SO_4	24-hr		0.3
H_2S	1-hr		2.16 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		3.24 *(If property is not residential, recreational, business, or commercial)*

Table 2. Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr		715
H_2SO_4	1-hr		50
H_2SO_4	24-hr		15
H_2S	1-hr		108 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		162 *(If property is not residential, recreational, business, or commercial)*

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Table 3. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	-0.46000	7.8*
SO_2	3-hr	-0.41000	25
SO_2	24-hr	-0.18000	5
SO_2	Annual	-0.04000	1
PM_{10}	24-hr		5
NO_2	1-hr	-3.79000	7.5**
NO_2	Annual	-0.30000	1
CO	1-hr	-21.47000	2000
CO	8-hr	-15.30000	500

Additional information for the De Minimis values listed above can be found at:

* www.tceq.texas.gov/assets/public/permitting/air/memos/appwso2.pdf

** www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Table 4. $PM_{2.5}$ Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Total Conc. = Secondary $PM_{2.5}$ + GLCmax (µg/m^3)	De Minimis (µg/m^3)
$PM_{2.5}$	24-hr		0	0.00000	1.2*
$PM_{2.5}$	Annual		0	0.00000	0.2*

Additional information for the De Minimis values listed above can be found at:
* www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Table 5. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + GLCmax] (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr		0	0	196
SO_2	3-hr		0	0	1300
SO_2	24-hr		0	0	365
SO_2	Annual		0	0	80
PM_{10}	24-hr		0	0	150
Pb	3-mo		0	0	0.15
NO_2	1-hr		0	0	188
NO_2	Annual		0	0	100
CO	1-hr		0	0	40000
CO	8-hr		0	0	10000

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Table 6. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + Secondary + GLCmax] (µg/m^3)
$PM_{2.5}$	24-hr		0	0	0
$PM_{2.5}$	Annual		0	0	0

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Standard (µg/m^3)
35
12

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Unit Impact Multipliers

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	1-hr GLCmax ($\mu g/m^3$ per lb/hr)	3-hr GLCmax ($\mu g/m^3$ per lb/hr)	8-hr GLCmax ($\mu g/m^3$ per lb/hr)	24-hr GLCmax ($\mu g/m^3$ per lb/hr)	Annual GLCmax ($\mu g/m^3$ per lb/hr)
17E01	17E01	Routine	2.67E-01	0.24057	0.18711	0.10692	0.021384
	25E01		8.53E-01	0.76797	0.59731	0.34132	0.068264
	6E07		6.02E-01	0.54216	0.42168	0.24096	0.048192
F3E00	EP Fug	Routine	74.5164	67.06476	52.16148	29.80656	5.961312

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
1,3-butadiene	106-99-0	1-hr	510	6.13
11-methyl-1-ethylcyclopentane	16747-50-5	1-hr	3500	0.00
2,3,3-trimethylpentane	560-21-4	1-hr	5600	-0.15
2,3,4-trimethylpentane	565-75-3	1-hr	5600	-0.12
2,4-dimethylhexane	589-43-5	1-hr	5600	0.00
2,5-dimethylhexane	592-13-2	1-hr	5600	0.00
n-butane	106-97-8	1-hr	66000	5.64
2,2,4-trimethylpentane	540-84-1	1-hr	5600	0.00
isopentane	78-78-4	1-hr	59000	-0.50
2-methylhexane	591-76-4	1-hr	10000	0.00
2-methylpentane	107-83-5	1-hr	5600	0.00
n-nonane	111-84-2	1-hr	4800	0.00
acetaldehyde	75-07-0	1-hr	120	-0.26
tert-butyl alcohol	75-65-0	1-hr	620	0.00
isobutene	115-11-7	1-hr	180000	5.67
methanol	67-56-1	1-hr	3900	-5.50
isobutylene oxide	558-30-5	1-hr	60	-5.10
isopropanol	67-63-0	1-hr	4920	-1.53
methyl ethyl ketone	78-93-3	1-hr	18000	0.00
propionaldehyde	123-38-6	1-hr	92	-0.02
propylene oxide	75-56-9	1-hr	70	-1.41
acetone	67-64-1	1-hr	7800	-5.88
methanol	67-56-1	1-hr	3900	-5.50
benzene	71-43-2	1-hr	170	-0.12
cis-2-butene	590-18-1	1-hr	10000	5.86
propane	74-98-6	1-hr	Simple Asphyxiant	-0.89
isobutane	75-28-5	1-hr	23000	-8.38
trans-2-butene	624-64-6	1-hr	10000	10.16
methyl tert-butyl ether	1634-04-4	1-hr	630	-0.46
methyl acetate	79-20-9	1-hr	6000	-0.51
3-methylhexane	589-34-4	1-hr	10000	-0.32
methyl formate	107-31-3	1-hr	1200	-0.17
acetonitrile	75-05-8	1-hr	340	0.00
acetylene	74-86-2	1-hr	26600	-0.07
1,2-butadiene	590-19-2	1-hr	1100	10.43
1-butene	106-98-9	1-hr	19000	10.43
2-methyl-1-butene	563-46-2	1-hr	290	-0.02

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
2-methyl-2-butene	513-35-9	1-hr	10000	0.00
3-methyl-1-butene	563-45-1	1-hr	290	-0.03
cis-2-pentene	627-20-3	1-hr	10000	-0.10
cyclopentadiene	542-92-7	1-hr	2000	0.00
cyclopentane	287-92-3	1-hr	17000	-0.05
cyclopentene	142-29-0	1-hr	3700	-0.04
2-butyne	503-17-3	1-hr	16400	0.00
ethylene	74-85-1	1-hr	1400	-0.01
isoprene	78-79-5	1-hr	130	0.00
neopentane	463-82-1	1-hr	59000	-0.04
1,4-pentadiene	591-93-5	1-hr	2000	-0.03
n-pentane	109-66-0	1-hr	59000	-0.08

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
1-pentene	109-67-1	1-hr	290	-0.04
cis-piperylene	1574-41-0	1-hr	2000	-0.02
propylene	115-07-1	1-hr	Simple Asphyxiant	-0.05
toluene	108-88-3	1-hr	4500	-0.06
4-vinylcyclohexene	100-40-3	1-hr	510	-0.01
methylacetaldehyde	534-15-6	1-hr	450	-0.33
2,2-dimethylbutane	75-83-2	1-hr	5600	-0.04
methyl isopropyl ether	598-53-8	1-hr	2500	-0.17
dimethyl ether	115-10-6	1-hr	19000	-0.07
ethylene oxide	75-21-8	1-hr	20	-0.01
N,N'-diethylhydroxylamine	3710-84-7	1-hr	400	3.67
tert-butyl catechol	98-29-3	1-hr	20	0.63
1,3-butadiene	106-99-0	Annual	9.9	0.61
11-methyl-1-ethylcyclopentane	16747-50-5	Annual	350	0.00
2,3,3-trimethylpentane	560-21-4	Annual	540	0.00
2,3,4-trimethylpentane	565-75-3	Annual	540	0.00
2,4-dimethylhexane	589-43-5	Annual	540	0.00
2,5-dimethylhexane	592-13-2	Annual	540	0.00
n-butane	106-97-8	Annual	7100	0.69
2,2,4-trimethylpentane	540-84-1	Annual	540	0.00
isopentane	78-78-4	Annual	7100	0.00
2-methylhexane	591-76-4	Annual	2700	0.00
2-methylpentane	107-83-5	Annual	200	0.00
n-nonane	111-84-2	Annual	450	0.00
acetaldehyde	75-07-0	Annual	45	-0.01
tert-butyl alcohol	75-65-0	Annual	62	0.00
isobutene	115-11-7	Annual	32000	0.56
methanol	67-56-1	Annual	2100	-0.06
isobutylene oxide	558-30-5	Annual	6	-0.11
isopropanol	67-63-0	Annual	492	-0.03
methyl ethyl ketone	78-93-3	Annual	2600	0.00
propionaldehyde	123-38-6	Annual	40	0.00
propylene oxide	75-56-9	Annual	7	-0.04
acetone	67-64-1	Annual	4800	-0.07
methanol	67-56-1	Annual	2100	-0.06
benzene	71-43-2	Annual	4.5	0.00
cis-2-butene	590-18-1	Annual	480	0.82
propane	74-98-6	Annual	Simple Asphyxiant	-0.02
isobutane	75-28-5	Annual	7100	0.43
trans-2-butene	624-64-6	Annual	480	0.82

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
methyl tert-butyl ether	1634-04-4	Annual	180	-0.01
methyl acetate	79-20-9	Annual	600	-0.01
3-methylhexane	589-34-4	Annual	2700	0.00
methyl formate	107-31-3	Annual	120	0.00
acetonitrile	75-05-8	Annual	34	0.00
acetylene	74-86-2	Annual	2660	0.00
1,2-butadiene	590-19-2	Annual	9.9	0.82
1-butene	106-98-9	Annual	1600	0.82
2-methyl-1-butene	563-46-2	Annual	480	0.00
2-methyl-2-butene	513-35-9	Annual	480	0.00
3-methyl-1-butene	563-45-1	Annual	2200	0.00
cis-2-pentene	627-20-3	Annual	480	0.00
cyclopentadiene	542-92-7	Annual	200	0.00
cyclopentane	287-92-3	Annual	1700	0.00
cyclopentene	142-29-0	Annual	370	0.00
2-butyne	503-17-3	Annual	1640	0.00
ethylene	74-85-1	Annual	34	0.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
isoprene	78-79-5	Annual	120	0.00
neopentane	463-82-1	Annual	7100	0.00
1,4-pentadiene	591-93-5	Annual	200	0.00
n-pentane	109-66-0	Annual	7100	0.00
1-pentene	109-67-1	Annual	480	0.00
cis-piperylene	1574-41-0	Annual	200	0.00
propylene	115-07-1	Annual	Simple Asphyxiant	0.00
toluene	108-88-3	Annual	1200	0.00
4-vinylcyclohexene	100-40-3	Annual	97	0.00
methylacetaldehyde	534-15-6	Annual	45	0.00
2,2-dimethylbutane	75-83-2	Annual	200	0.00
methyl isopropyl ether	598-53-8	Annual	250	0.00
dimethyl ether	115-10-6	Annual	1900	0.00
ethylene oxide	75-21-8	Annual	2	0.00
N,N'-diethylhydroxylamine	3710-84-7	Annual	40	0.29
tert-butyl catechol	98-29-3	Annual	2	0.05

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Modeling File Names

Date: _10/10/2019
Permit #: __2128
Company Name: __Equistar

Facility:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
Area	generic	1-hr	.s3i	fugitives
Alky Flare DW	generic	1-hr	.s3i	Alky Flare
IPOH	generic	1-hr	.s3i	IPOH Flare
East Plant	generic	1-hr	.s3i	East Plant Flare

EPN	Model ID	GLCmax @ 1 lb/hr ug/m3		
17E01	17E01	0.267	0.2673	max beyond property line
25E01	25E01	0.853	0.8533	used GLC at property line 924 m
6E07	6E07	0.602	0.6024	used value at property line 1092 m with lowest GLC to be conservative (max
F3E00	EP Fug	124.194	74.5164	emissions modelled at 1 m, applied factor for sources < 10 m per TCEQ guida

Emissions Increase

EPN		17E01	17E01	17E01	6E07	25E01	F3E00	**GLCmax**	ESL	< 10%
		Project Increase	PBR incorporation	Standard Permit			PBR incorporation			ESL
		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	**ug/m3**	ug/m3	
NOx		4.99	1.05	14.08	-9.66	-4.42		**-4.211**		
CO		25.45	5.36	71.77	-49.25	-22.52		**-21.466**		
SO2		2.29		3.18	-3.17	-0.01		**-0.455**		
1,3-butadiene	106-99-0		0.19	2.37	-0.07	-2.30	0.10	**6.133**	510	Yes
11-methyl-1-ethylcyclopentane	16747-50-5		0.00					**0.000**	3500	Yes
2,3,3-trimethylpentane	560-21-4		0.00	0.26		-0.26		**-0.149**	5600	Yes
2,3,4-trimethylpentane	565-75-3		0.00	0.21		-0.21		**-0.120**	5600	Yes
2,4-dimethylhexane	589-43-5		0.00					**0.000**	5600	Yes
2,5-dimethylhexane	592-13-2		0.00					**0.000**	5600	Yes
n-butane	106-97-8		0.13	12.79	-10.61	-2.18	0.14	**5.636**	66000	Yes
2,2,4-trimethylpentane	540-84-1		0.01					**0.003**	5600	Yes
isopentane	78-78-4		0.03	1.31	-1.02	-0.29		**-0.502**	59000	Yes
2-methylhexane	591-76-4		0.00					**0.001**	10000	Yes
2-methylpentane	107-83-5		0.01					**0.002**	5600	Yes
n-nonane	111-84-2		0.01					**0.001**	4800	Yes
acetaldehyde	75-07-0		0.04	0.47		-0.47		**-0.264**	120	Yes
tert-butyl alcohol	75-65-0		0.01					**0.002**	620	Yes
isobutene	115-11-7		0.67	8.50	-0.14	-8.36	0.14	**5.667**	180000	Yes
methanol	67-56-1		0.53	9.62		-9.62		**-5.497**	3900	Yes
isobutylene oxide	558-30-5		0.70	9.02		-9.02		**-5.097**	60	Yes

EPN		17E01	17E01	17E01	6E07	25E01	F3E00	**GLCmax**	ESL	< 10%
isopropanol	67-63-0		0.17	2.69		-2.69		**-1.532**	4920	Yes
methyl ethyl ketone	78-93-3		0.01					**0.002**	18000	Yes
propionaldehyde	123-38-6		0.02	0.05		-0.05		**-0.022**	92	Yes
propylene oxide	75-56-9		0.33	2.56		-2.56		**-1.414**	70	Yes
acetone	67-64-1		0.18	10.12		-10.12		**-5.885**	7800	Yes
methanol	67-56-1		0.53	9.62		-9.62		**-5.497**	3900	Yes
benzene	71-43-2		0.04	0.39	-0.39			**-0.122**	170	Yes
cis-2-butene	590-18-1		0.47	8.04	-0.06	-7.98	0.14	**5.863**	10000	Yes
propane	74-98-6	0.40	0.05	2.35	-1.45	-0.89		**-0.891**	ple Asphyx	N/A
isobutane	75-28-5		0.03	55.59	-54.82	-0.77	0.14	**-8.383**	23000	Yes
trans-2-butene	624-64-6		0.02	0.50	-0.08	-0.42	0.14	**10.164**	10000	Yes
methyl tert-butyl ether	1634-04-4		0.02	0.79		-0.79		**-0.456**	630	Yes
methyl acetate	79-20-9		0.01	0.88		-0.88		**-0.513**	6000	Yes
3-methylhexane	589-34-4		0.01	0.56		-0.56		**-0.323**	10000	Yes
methyl formate	107-31-3		0.01	0.29		-0.29		**-0.166**	1200	Yes
acetonitrile	75-05-8			0.01	-0.01			**-0.003**	340	Yes
acetylene	74-86-2			0.20	-0.20			**-0.066**	26600	Yes
1,2-butadiene	590-19-2			0.01	-0.01		0.14	**10.429**	1100	Yes
1-butene	106-98-9			0.01	-0.01		0.14	**10.430**	19000	Yes
2-methyl-1-butene	563-46-2			0.06	-0.06			**-0.019**	290	Yes
2-methyl-2-butene	513-35-9			0.00	0.00			**-0.001**	10000	Yes
3-methyl-1-butene	563-45-1			0.08	-0.08			**-0.028**	290	Yes
cis-2-pentene	627-20-3			0.30	-0.30			**-0.100**	10000	Yes
cyclopentadiene	542-92-7			0.01	-0.01			**-0.004**	2000	Yes
cyclopentane	287-92-3			0.15	-0.15			**-0.052**	17000	Yes
cyclopentene	142-29-0			0.12	-0.12			**-0.041**	3700	Yes
2-butyne	503-17-3			0.01	-0.01			**-0.002**	16400	Yes
ethylene	74-85-1			0.03	-0.03			**-0.009**	1400	Yes
isoprene	78-79-5			0.01	-0.01			**-0.004**	130	Yes
neopentane	463-82-1			0.08	-0.03	-0.05		**-0.040**	59000	Yes
1,4-pentadiene	591-93-5			0.10	-0.10			**-0.034**	2000	Yes
n-pentane	109-66-0			0.22	-0.19	-0.02		**-0.078**	59000	Yes
1-pentene	109-67-1			0.07	-0.01	-0.06		**-0.039**	290	Yes

EPN		17E01	17E01	17E01	6E07	25E01	F3E00	**GLCmax**	ESL	< 10%
cis-piperylene	1574-41-0			0.07	-0.07			**-0.023**	2000	Yes
propylene	115-07-1			0.09	0.00	-0.09		**-0.051**	ple Asphyx	N/A
toluene	108-88-3			0.17	-0.17			**-0.056**	4500	Yes
4-vinylcyclohexene	100-40-3			0.02	-0.02			**-0.005**	510	Yes
methylacetaldehyde	534-15-6			0.56		-0.56		**-0.326**	450	Yes
2,2-dimethylbutane	75-83-2			0.07		-0.07		**-0.039**	5600	Yes
methyl isopropyl ether	598-53-8			0.29		-0.29		**-0.169**	2500	Yes
dimethyl ether	115-10-6			0.12		-0.12		**-0.070**	19000	Yes
ethylene oxide	75-21-8			0.02		-0.02		**-0.014**	20	Yes
N,N'-diethylhydroxylamine	3710-84-7						0.05	**3.668**	400	Yes
tert-butyl catechol	98-29-3						0.01	**0.626**	20	Yes

	1-hr		3-hr		8-hr		24-hr		Annual	
	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3
NO2	0.9	-3.79							0.08	-0.30
CO	1	-21.47			0.7	-15.03			0.08	-1.72
SO2	1	-0.46	0.9	-0.41			0.4	-0.18	0.08	-0.04

EPN

17E01
25E01
6E07 occurs beyond property line)
F3E00 ance

multiplier
Emissions Increase 0.08

EPN	17E01	17E01	17E01	6E07	25E01	F3E00	GLCmax	**Cmax annu**	ESL	< 10%
	Project Increase	PBR incorporation	Standard Permit			PBR incorporation				ESL
	tpy	tpy	tpy	tpy	tpy	tpy	ug/m3	**ug/m3**	ug/m3	
NOx	9.11	0.31	12.79	-7.37	-5.42		-0.714	**-0.0571**		
CO	46.44	1.55	65.16	-37.54	-27.62		-3.639	**-0.2911**		
SO2	3.37		4.85	-4.83	-0.02		-0.167	**-0.0133**		
1,3-butadiene		0.24	0.03	-0.02	-0.02	0.45	7.667	**0.6134**	9.9	Yes
11-methyl-1-ethylcyclopentane		0.00					0.000	**0.0000**	350	Yes
2,3,3-trimethylpentane		0.00	0.16		-0.16		-0.021	**-0.0017**	540	Yes
2,3,4-trimethylpentane		0.00	0.13		-0.13		-0.017	**-0.0014**	540	Yes
2,4-dimethylhexane		0.00					0.000	**0.0000**	540	Yes
2,5-dimethylhexane		0.00					0.000	**0.0000**	540	Yes
n-butane		0.08	18.60	-15.26	-3.34	0.60	8.598	**0.6878**	7100	Yes
2,2,4-trimethylpentane		0.00					0.000	**0.0000**	540	Yes
isopentane		0.01	0.19		-0.19		-0.025	**-0.0020**	7100	Yes
2-methylhexane		0.00					0.000	**0.0000**	2700	Yes
2-methylpentane		0.00					0.000	**0.0000**	200	Yes
n-nonane		0.00					0.000	**0.0000**	450	Yes
acetaldehyde		0.02	0.66		-0.66		-0.087	**-0.0070**	45	Yes
tert-butyl alcohol		0.00					0.000	**0.0000**	62	Yes
isobutene		0.58	24.46	-0.04	-24.42	0.60	6.973	**0.5579**	32000	Yes
methanol		0.10	5.98		-5.98		-0.794	**-0.0635**	2100	Yes
isobutylene oxide		0.26	10.49		-10.49		-1.387	**-0.1110**	6	Yes

EPN	17E01	17E01	17E01	6E07	25E01	F3E00	GLCmax	**Cmax annu**	ESL	< 10%
isopropanol		0.07	3.13		-3.13		-0.414	**-0.0331**	492	Yes
methyl ethyl ketone		0.00					0.000	**0.0000**	2600	Yes
propionaldehyde		0.00	0.05		-0.05		-0.007	**-0.0005**	40	Yes
propylene oxide		0.10	3.44		-3.44		-0.454	**-0.0364**	7	Yes
acetone		0.08	6.29		-6.29		-0.837	**-0.0670**	4800	Yes
methanol		0.10	5.98		-5.98		-0.794	**-0.0635**	2100	Yes
benzene		0.02	0.08	-0.08			-0.005	**-0.0004**	4.5	Yes
cis-2-butene		0.00	0.03	-0.02	-0.01	0.60	10.204	**0.8164**	480	Yes
propane	0.72	0.00	3.29	-3.11	-0.18		-0.218	**-0.0174**	ple Asphyx	N/A
isobutane		0.00	62.60	-62.48	-0.12	0.60	5.412	**0.4330**	7100	Yes
trans-2-butene		0.00	0.03	-0.03	0.00	0.60	10.205	**0.8164**	480	Yes
methyl tert-butyl ether		0.01	0.49		-0.49		-0.065	**-0.0052**	180	Yes
methyl acetate		0.01	0.55		-0.55		-0.073	**-0.0058**	600	Yes
3-methylhexane		0.01	0.35		-0.35		-0.046	**-0.0037**	2700	Yes
methyl formate		0.01	0.23		-0.23		-0.031	**-0.0024**	120	Yes
acetonitrile			0.02	-0.02			-0.001	**-0.0001**	34	Yes
acetylene			0.01	-0.01			-0.001	**-0.0001**	2660	Yes
1,2-butadiene			0.01	-0.01		0.60	10.207	**0.8166**	9.9	Yes
1-butene			0.01	-0.01		0.60	10.207	**0.8166**	1600	Yes
2-methyl-1-butene			0.03	-0.03			-0.002	**-0.0002**	480	Yes
2-methyl-2-butene			0.01	-0.01			-0.001	**-0.0001**	480	Yes
3-methyl-1-butene			0.03	-0.03			-0.002	**-0.0002**	2200	Yes
cis-2-pentene			0.08	-0.08			-0.006	**-0.0005**	480	Yes
cyclopentadiene			0.01	-0.01			-0.001	**-0.0001**	200	Yes
cyclopentane			0.30	-0.30			-0.023	**-0.0018**	1700	Yes
cyclopentene			0.11	-0.11			-0.009	**-0.0007**	370	Yes
2-butyne			0.01	-0.01			-0.001	**-0.0001**	1640	Yes
ethylene			0.01	-0.01			-0.001	**0.0000**	34	Yes
isoprene			0.02	-0.02			-0.001	**-0.0001**	120	Yes
neopentane			0.12	-0.06	-0.06		-0.012	**-0.0010**	7100	Yes
1,4-pentadiene			0.05	-0.05			-0.004	**-0.0003**	200	Yes
n-pentane			0.25	-0.24	-0.02		-0.020	**-0.0016**	7100	Yes
1-pentene			0.07	-0.01	-0.06		-0.009	**-0.0007**	480	Yes

EPN	17E01	17E01	17E01	6E07	25E01	F3E00	GLCmax	**Cmax annu**	ESL	< 10%
cis-piperylene			0.10	-0.10			-0.007	**-0.0006**	200	Yes
propylene			0.03	-0.01	-0.02		-0.004	**-0.0003**	ple Asphyx	N/A
toluene			0.26	-0.26			-0.020	**-0.0016**	1200	Yes
4-vinylcyclohexene			0.02	-0.02			-0.001	**-0.0001**	97	Yes
methylacetaldehyde			0.35		-0.35		-0.046	**-0.0037**	45	Yes
2,2-dimethylbutane			0.04		-0.04		-0.005	**-0.0004**	200	Yes
methyl isopropyl ether			0.18		-0.18		-0.024	**-0.0019**	250	Yes
dimethyl ether			0.14		-0.14		-0.019	**-0.0015**	1900	Yes
ethylene oxide			0.01		-0.01		-0.002	**-0.0002**	2	Yes
N,N'-diethylhydroxylamine						0.22	3.668	**0.2935**	40	Yes
tert-butyl catechol						0.04	0.626	**0.0501**	2	Yes

NO2
CO
SO2

Preliminary Determination Summary

Equistar Chemicals, LP
Permit Numbers 2933 and N140M1

I. Applicant

Equistar Chemicals LP
PO Box 777
Channelview, TX 77530-0777

II. Project Location

Channelview Complex
8280 Sheldon Rd
Harris County
Channelview, Texas 77530

III. Project Description

Lyondell submitted an amendment to modify the operation of the existing flare to meet future regulatory requirements. Additional natural gas is required to meet the anticipated operating limit to maintain a net heating value of the flare combustion zone gas (NHVcz) at or above 270 Btu/scf. The site anticipates future requirements for the combustion zone that match the limits currently identified in 40 CFR 63 Subpart CC. No changes to the operation of the process unit or process vent controlled by the flare are being made with this project. All increases of VOC emissions will result from the minimal non-methane and non-ethane organics present in the imported natural gas supply. Additionally, the application identifies the SO_2 increases resulting from the minimal sulfur present in the natural gas. No increases in emissions from maintenance, startup, and shutdown (MSS) activities are included in this project.

IV. Project Emissions

Air Contaminant	Proposed Allowable Emission Rates (tpy)
VOC	742.28
NO_x	2276.91
SO_2	150.85
CO	2240.26

V. Federal Applicability

The following chart illustrates the annual project emissions for each pollutant and whether this pollutant triggers PSD or Nonattainment (NA) review.

Pollutant	Project Emissions (tpy)	Major Mod Trigger (tpy)	NA Triggered Y/N	PSD Triggered Y/N
VOC	2.16	25 for NA 40 for PSD	N	N
NO_x	5.73	25 for NA 40 for PSD	Y	N
SO_2	2.81	40	N	N
CO	29.49	100	N	N

The site is located in Harris County, which has been designated as a serious nonattainment area for ozone. The Channelview Complex is an existing major source of VOC and NO_X, and the project will result in a significant net increase of NO_X.

The Channelview Facility is a named source. The site is located in an attainment area for at least one pollutant, and is an existing major stationary source. The project emission increases are below the applicable significant significance threshold in 40 CFR § 52.21(b)(23)(i) for VOC, SO_2, and CO. PSD BACT and air quality analysis (AQA) requirements do not apply.

Pollutant	Project Increase (tpy) [1]	NA Netting Trigger (tpy)	PSD Netting Trigger (tpy)	Netting Required Y/N	Net Emission Change (tpy) [2]	Major Mod Trigger (tpy)	PSD Triggered Y/N	NA Triggered Y/N
VOC [3]	2.16	5	40	N	N/A	25	N	N
NOx [3, 4]	5.73	5	40	Y	105.43	25	N	Y
SO_2 [4]	2.81	N/A	40	N	N/A	40	N	N
CO	29.49	N/A	100	N	N/A	100	N	N

[1] Project Increases: Comparison of Baseline Actual to PTE (or Projected Actual) Increases only

[2] Net Emissions: Baseline Actual to PTE (or Projected Actual) for the project currently under review, Baseline Actual to PTE for all other increases and decreases within netting window.

[3] Ozone precursor. Either pollutant precursor can trigger BACT/LAER and impacts analysis, as applicable.

[4] $PM_{2.5}$ precursor. Not used to trigger $PM_{2.5}$ BACT/LAER or impacts analysis at this time.

VI. Control Technology Review

A control technology review is required for all new and modified sources. The following controls required by the permits satisfy LAER for emissions of NO_X, based on a review of recently issued permits from Texas and other states, and consideration of RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant.

Flare

The flare is designed to meet the requirements of 40 CFR Part 60.18 and to achieve a VOC compound destruction efficiency of 99% for compounds with up to three carbons, and 98% for compounds with four or more carbon atoms. The flare is equipped with a continuous flow monitor and composition analyzer.

VII. Air Quality Analysis

The air quality analysis (AQA) is acceptable for all review types and pollutants. The results are summarized below.

A. Minor Source NSR and Air Toxics Review

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
SO_2	1-hr	0.00488	14.3

Table 2. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
SO_2	1-hr	0.00488	7.8
SO_2	3-hr	0.00439	25
SO_2	24-hr	0.00195	5
SO_2	Annual	0.00363	1
NO_2	1-hr	0.47	7.5

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	De Minimis ($\mu g/m^3$)
NO_2	Annual	0.013	1
CO	1-hr	2.69	2,000
CO	8-hr	1.88	500

The GLC_{max} are the maximum predicted concentration associated with one year of meteorological data.

The justification for selecting the EPA's interim 1-hr NO_2 and 1-hr SO_2 De Minimis levels was based on the assumptions underlying EPA's development of the 1-hr NO_2 and 1-hr SO_2 De Minimis levels. As explained in EPA guidance memoranda[1,2], the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 and 1-hr SO_2 NAAQS.

VIII. Offsets

The site is located in Harris County, which has been designated as a serious nonattainment area for ozone. The Channelview Facility is an existing major source of VOC and NO_X, and the project will result in a significant net increase of NO_X.

When issued, the permit requires that the permit holder offset the project emission increase for facilities authorized by this permit prior to the commencement of operation, through participation in the TCEQ Emission Banking and Trading (EBT) Program in accordance with the rules in 30 TAC Chapter 101, Subchapter H.

The permit holder shall use 7.3 tpy of NO_X credits to offset the 6.9 tpy NO_X project emissions increase for the facilities authorized by this permit at a ratio of 1.2 to 1.0.

Prior to the commencement of operation, the permit holder is required to obtain approval from the TCEQ EBT Program for the credits being used and then submit a permit alteration or amendment request to the TCEQ Air Permits

[1] www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf

[2] www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

Division (and copy the TCEQ Regional Office) to identify approved credits by TCEQ credit certificate number.

IX. Alternative Site Analysis and Compliance Certification

The applicant has submitted the required demonstration relating to consideration of alternative sites and Clean Air Act compliance status for sites owned or operated by the applicant (or by any entity controlling, controlled by, or under common control with the applicant). The analysis demonstrated that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that location.

X. Conclusion

As described above, the applicant has demonstrated that the project meets all applicable rules, regulations and requirements of the Texas and Federal Clean Air Acts. The Executive Director's preliminary determination is that the permits should be issued.

Special Conditions

Permit Numbers 2933, PSDTX1270, and N140M1

1. This permit covers only those sources of emissions listed in the attached table entitled “Emission Sources – Maximum Allowable Emission Rates” (MAERT), and those sources are limited to the emission limits and other conditions specified in that table.

2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing Volatile Organic Compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable emission rates table. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions with the exception of safety valves listed below and those that discharge directly to the atmosphere as a result of fire or failure of utilities.

PSV Number	Service	Set	Operating Pressure (psig)
49021	TK-4901 Suction Line	180	25
48036	TK-4901 Feed Line	180	50
49001	P-4901A/B Discharge	180	30
49022	TK-4904 Suction Line	180	25
49017	P-4903A/B Discharge	275	138
49016	TK-4902 Suction Line	50	25
48037	TK-4092 Feed Line	180	50
48012	TK-4903 Feed Line	180	50
49017	TK-4903 Suction Line	50	25
49003	P-4902A/B/C Discharge	180	47
49051	P-4902A Discharge to 16” PL	150	47
39568	P-4902B Suction (Dock)	225	150
49036	P-4902C Suction Line	180	25
49018	TK-4907 Suction Line	180	25
49519	P-4928A/B Discharge (Minimum Flow)	180	140
49514	P-4928A/B Discharge	180	140
49515	P-4928A/B Discharge	180	140
49516	P-4928A/B Discharge	180	140
49517	P-4928A/B Discharge	180	140
48016	1st Feed System	275	160
48035	3rd Feed System	720	275
49023	2nd Feed System	275	150
49513	PGO	180	20

Federal Applicability

3. These facilities shall comply with all requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):

   A. Subpart A, General Provisions.

   B. Subpart D, Standards of Performance for Fossil-Fuel-Fired Steam Generators

C. Subpart K, Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.

D. Subpart Ka, Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.

E. Subpart Kb, Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.

F. Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006.

G. Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

4. These facilities shall comply with all requirements of the U.S. EPA regulations on National Emission Standards for Hazardous Air Pollutants promulgated in 40 CFR Part 61, as applicable, for:

A. Subpart A, General Provisions.

B. Subpart J, Equipment Leaks (Fugitive Emission Sources) of Benzene

C. Subpart V, Equipment Leaks (Fugitive Emission Sources)

D. Subpart Y, Benzene Emission From Benzene Storage Vessels

E. Subpart FF, Benzene Waste Operations

5. These facilities shall comply with all applicable requirements of the U.S. EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:

A. Subpart A, General Provisions.

B. Subpart G, National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater

C. Subpart YY, Generic Maximum Achievable Control Technology Standards.

D. Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

E. Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

Emission Standards and Operating Specifications

6. Tanks are approved to store the liquids on the Approved Product List represented in Attachment A.

7. Storage tanks are subject to the following requirements: The control requirements specified in parts A-C of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.

A. The tank emissions must be controlled as specified in one of the paragraphs below:

(1) An internal floating deck or "roof" shall be installed. A domed external floating roof tank is equivalent to an internal floating roof tank. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

(2) An open-top tank shall contain a floating roof (external floating roof tank) which uses double seal or secondary seal technology provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

B. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and any seal gap measurements specified in Title 40 Code of Federal Regulations § 60.113b (40 CFR § 60.113b) Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989) to verify fitting and seal integrity. Records shall be maintained of the dates inspection was performed, any measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.

C. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

D. Except for labels, logos, etc. not to exceed 15 percent of the tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white or unpainted aluminum. Storage tanks must be equipped with permanent submerged fill pipes.

E. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-month period. The record shall include tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions from tanks shall be calculated using the methods that were used to determine the MAERT limits in the permit application dated December 5, 2016. Sample calculations from the application shall be attached to a copy of this permit at the plant site.

8. Tanks less than 1,000 gallons or containing a mixture of VOCs having a partial vapor pressures less than 0.5 psia or containing only non-VOCs are exempt from the requirements in Special Condition No. 7.D.

9. Atmospheric relief valves in VOC service that are not equipped with rupture disks shall be checked for leaks on a quarterly basis with an approved gas analyzer. A leak shall be defined as 500 parts per million by volume (ppmv). There shall be no variance for inaccessible valves. All leaking valves shall be repaired or replaced at the earliest opportunity but not later than the next scheduled process shutdown.

10. Analyzer sample system vents or speed loops shall be equipped with vapor recovery or liquid recovery systems (vapor samples routed to flare system or liquids samples route back to process). Analyzer (gas chromatographs) vapor sample loops shall depressure to atmospheric pressure during sample injection only and shall be routed to the flare during periods when sample is not being injected.

11. Cracking heaters, and heaters associated with the Olefin II and Flex/Isom Units shall not exceed the following firing rates:

EPN 44HTHTR, EPN EF4419 Pyrolysis/Steam Production Service	5,275 MMBtu/hr (combined total)*
EPN 44HTHTR *Cracking Heaters: (F-4401, F-4402, F-4403, F-4404, F-4405, F-4406, F-4407, F-4408, F-4409, F-4410, F-4411, F-4412, F-4413, F-4414, F-4415) *Ethane Heater (F4418): *Superheaters (F48001A/B)	
Regeneration Heater (F4601):	25 MMBtu/hr
Flex Regeneration Heater I (F4351):	13 MMBtu/hr
Flex Regeneration Heater II (F4361):	4.1 MMBtu/hr
Flexibility DP Heater I (F4360):	16 MMBtu/hr
Flexibility DP Heater II (F4360C):	16 MMBtu/hr
EPN EF4419 *Cracking Heater: (F-4419)	640 MMBtu/hr

The heating value of the fuel (Btu/scf) and the fuel flow rate shall be continuously monitored for the cracking heaters, ethane heater, and steam superheaters. Compliance with air contaminant emission limits shall be based upon the above firing rate. Quality-assured (or valid) data must be generated when the fired unit is operating. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the fired unit operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Compliance with air contaminant emission limits shall be based upon the above firing rate.

12. Concentrations of NH_3 from the Cracking Heater Stack (Emission Point Nos. EPN 44HTHTRS, EPN EF 4419) shall not exceed 10 ppmvd on an hourly basis when corrected to three percent oxygen (O_2). The NH_3 concentration shall be tested or calculated according to one of the three methods listed below:

    A. The holder of this permit may install, calibrate, maintain, and operate a CEMS to measure and record the concentrations of NH_3. The NH_3 concentrations shall be corrected and reported in accordance with Special Condition No. 23.

    B. If a sorbent tube device specific for NH_3 is used, the frequency of the sorbent tube testing shall be daily for the first 60 days of SCR operation, after which, the frequency of the sorbent tube testing may be reduced from daily to weekly after operating procedures have been developed to prevent excess amounts of NH_3 from being introduced, and when operation of the SCR system has been proven successful with regard to controlling NH_3 slippage.

C. As an approved alternative to sorbent or stain tube testing or an NH_3 CEMS, the permit holder may install and operate a second oxides of nitrogen (NO_x) CEMS probe located upstream of the SCR and the stack NO_x CEMS, which may be used in association with the SCR efficiency and NH_3 injection rate to estimate NH_3 slip.

D. Any other method used for measuring NH_3 slippage shall require prior approval from the TCEQ.

13. Purchased gas combusted at this facility shall be sweet natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet.

14. Flares shall be designed and operated in accordance with the following requirements: **(TBD)**

A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions.

The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements.

B. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at, a frequency in accordance with the manufacturer's specifications.

C. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare.

D. The permit holder shall install a continuous flow monitor and composition analyzer that provide a record of the vent stream flow and composition to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and composition shall be recorded each hour.

The monitors shall be calibrated on an annual basis to meet the following accuracy specifications: the flow monitor shall be ±5.0 percent, temperature monitor shall be ±2.0 percent at absolute temperature, and pressure monitor shall be ±5.0 mm Hg;

The analyzer shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to calculate and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

The monitors and analyzers shall operate as required by this section at least 95 percent of the time when the flare is operational, averaged over a calendar 12-month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR § 60.18(f)(4) shall be recorded at least once every 15 minutes.

E. The flare (EPN EFL60731) shall operate in accordance with the 40 CFR 63 Subpart YY "National Emission Standards for Hazardous Air Pollutants: Generic Maximum Achievable Control Technology Standards Residual Risk and Technology Review for Ethylene Production" signed by the EPA Administrator as a final rule on March 12, 2020, the

subsequently promulgated final version of that subpart, and Alternate Method of Control (AMOC) No. 157 issued May 12, 2020. Compliance with the requirements of this paragraph shall begin December 31, 2020 and occur as otherwise specified in the AMOC. Prior to the compliance requirements and schedule of this paragraph, Special Condition Nos. 14.A through 14.D shall apply.**(TBD)**

Compliance Assurance Monitoring (CAM)

15. The following requirements apply to capture systems for the OP2 Flare, identified as EPN 48E01.

A. The holder of this permit shall perform one of the following:

(1) Conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify that there are no leaking components in the capture system; or

(2) Once a year, verify the capture systems are leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

B. If there is a bypass for the control device, the permit holder shall either:

(1) Install a flow indicator that records and verifies zero flow at least once every 15 minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

(2) Once a month, inspect the valves, verifying that the position of the valves and the condition of the car seals that prevent flow out the bypass.

A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valve if the pressure between disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

C. Records of the inspections required shall be maintained and if the results of any of the above inspections are not satisfactory, the permit holder shall promptly take necessary corrective action.

Fugitive Leak Detection and Repair

Piping, Valves, Connectors, Pumps, and Compressors in VOC Service - 28VHP

16. The following requirements apply to piping, valves, connectors, pumps, agitators, and compressors containing or in contact with fluids that could reasonably be expected to contain greater than or equal to 10 weight percent volatile organic compounds (VOC) at any time:

A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

- piping and instrumentation diagram (PID);
- a written or electronic database or electronic file;
- color coding;
- a form of weatherproof identification; or
- designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), API, American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Paragraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. No later than the next scheduled quarterly monitoring after initial installation or replacement, all new or reworked connections shall be gas-tested or hydraulically-tested at no less than normal operating pressure and adjustments made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve;

or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once within the 72 hour period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. If a relief valve is equipped with rupture disc, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service and full unit reaches operating pressure.

G. Except as may be provided for in the special conditions of this permit, all pump and compressor seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored.

These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump and compressor seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days and a record of the attempt shall be maintained.

I. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on

the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shut down as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I) or 500 pounds, whichever is greater, the TCEQ Regional Manager and any local programs shall be notified and the TCEQ Executive Director may require early unit shut down or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F and G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

17. Pumps and compressors equipped with single seals in HRVOC (as defined in 30 TAC § 115.10 unless exempted by § 115.787) or greater than 10 weight percent benzene service shall be monitored with a leak definition of 500 ppmv rather than the 2,000 ppmv identified in Special Condition No. 16.H.

18. In addition to the weekly physical inspection required by Item E of Special Condition No. 16, all connectors in non-HRVOC gas/vapor and light liquid service shall be monitored annually with an approved gas analyzer in accordance with Items F through J of Special Condition No. 16. Alternative monitoring frequency schedules ("skip options") of 40 CFR Part 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, may be used in lieu of the monitoring frequency required by this permit condition. Compliance with this condition does not assure compliance with requirements of applicable state or federal regulation and does not constitute approval of alternative standards for these regulations.

19. In addition to the weekly physical inspection required by Item E of Special Condition No. 16, all accessible connectors in HRVOC gas/vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Items F through J of Special Condition No. 16.

A. Connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

B. The percent of connectors leaking used in paragraph A shall be determined using the following formula:

$$(Cl + Cs) \times 100/Ct = Cp$$

Where:

Cl = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Cs = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

Ct = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

Cp = the percentage of leaking connectors for the monitoring period.

Piping, Valves, Connectors, Pumps, and Compressors in VOC Service – 28LAER.

20. This special condition applies to components associated with the construction of F-4419 as submitted in the application dated September 23, 2011.

Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment:

A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

- piping and instrumentation diagram (PID);
- a written or electronic database or electronic file;
- color coding;
- a form of weatherproof identification; or
- designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above. If an unsafe-to-monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe-to-monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service and the full unit reaches operating pressure. Adjustments shall be made as necessary to obtain leak-free performance.

Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program in accordance with items F thru J of this special condition.

In lieu of the monitoring frequency specified above, connectors may be monitored on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent. Connectors may be monitored on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

The percent of connectors leaking used in paragraph B shall be determined using the following formula:

$$(Cl + Cs) \times 100/Ct = Cp$$

Where:

Cl = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Cs = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

Ct = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including non-accessible and unsafe-to-monitor connectors.

Cp = the percentage of leaking connectors for the monitoring period.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

(1) a cap, blind flange, plug, or second valve must be installed on the line or valve; or

(2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open-ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Non-accessible valves shall be monitored by leak-checking for fugitive emissions at least annually using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown. A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs are being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, than the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service and the full unit reaches operating pressure.

G. All new and replacement pumps, compressors, and agitators shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control

systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly.

H. Damaged or leaking valves, connectors, compressor seals, pump seals, and agitator seals found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

I. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times , test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator=s log or equivalent.

J. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

K. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

L. The percent of valves leaking used in paragraph K shall be determined using the following formula:

$$(Vl + Vs) \times 100/Vt = Vp$$

Where:

Vl = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Vs = the number of valves for which repair has been delayed and are listed on the facility shutdown log.

Vt = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including non-accessible and unsafe to monitor valves.

Vp = the percentage of leaking valves for the monitoring period.

M. Any component found to be leaking by physical inspection (i.e., sight, sound, or smell) shall be repaired or monitored with an approved gas analyzer within 15 days to determine whether the component is leaking in excess of 500 ppmv of VOC. If the component is found to be leaking in excess of 500 ppmv of VOC, it shall be subject to the repair and replacement requirements contained in this special condition.

Piping, Valves, Pumps, and Compressors in contact with NH_3 – 28AVO

21. Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment:

A. Audio, olfactory, and visual checks for leaks within the operating area shall be made every shift.

B. Immediately, but no later than 24 hours upon detection of a leak, plant personnel shall take at least one of the following actions:

(1) Isolate the leak.

(2) Commence repair or replacement of the leaking component.

(3) Use a leak collection/containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.

Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the TCEQ upon request.

Initial Determination of Compliance

22. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the cracking heaters (EPN 44HTHTRS F-4401, F-4402, F-4403, F-4404, F-4405, F-4406, F -4407, F-4408, F-4409, F-4410, F-4411, F-4412, F-4413, F-4414, F-4418 and EPN EF4419). Three cracking heater stacks, to be determined by the permit holder with agreement of the TCEQ Houston Regional Office, may be tested as representative of the eight cracking heater stacks.

Ethane Heater (EPN 44E18); Regeneration Heaters (EPNs F4601 and F4361); Flex Regeneration Heaters (EPNs F4351 and F4361); Flexibility DP Heaters (EPNs F4360 and F4360C); and Steam Superheaters (EPNs 48E001A/B). The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

A. The appropriate TCEQ Regional Office in the region where the source is located shall be contacted as soon as testing is scheduled, but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

(1) Date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit conditions, TCEQ, or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in B of this condition shall be submitted to the TCEQ Office of Permitting and Registration, Austin.

Test waivers and alternate/equivalent procedure proposals for NSPS testing which must have the EPA approval shall be submitted to the TCEQ Regional Director.

B. Air contaminants emitted from the cracking heaters, ethane heater, and steam superheaters to be tested for include (but are not limited to) nitrogen oxide (NO_x) and carbon monoxide.

C. Sampling may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office.

D. The source being tested shall operate at maximum represented operating rates during stack emission testing. Primary operating parameters that enable determination of firing rates shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting.

If the source is unable to operate at maximum represented operating rates during testing, then additional stack testing may be required when higher represented operating rates are achieved.

E. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after all sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Houston Regional Office, Houston.

One copy to the Harris County Air Pollution Control Program, Pasadena.

Continuous Demonstration of Compliance

23. The permit holder shall install, calibrate, and maintain a predictive emission monitoring system (PEMS) to measure and record the in-stack concentration of NO_x from the Cracking Heaters (EPN 44HTHTRS F-4401, F-4402, F-4403, F-4404, F-4405, F-4406, F-4407, F-4408, F-4410, F-4411, F-4412, F-4413, F-4414, F-4415, F-4418 and EPN EF4419) when in operation.

    A. A PEMS may be used for demonstrating continuous compliance if it can be proven to have the same or better accuracy, precision, reliability, accessibility, and timeliness as that provided by a hardware CEMS. All PEMS shall be subject to the approval of the TCEQ Executive Director. Owners or operators must petition the TCEQ Executive Director for approval to use PEMS. The petition must include results of tests conducted beforehand to demonstrate equivalent accuracy and precision of PEMS to that of hardware CEMS. Demonstrating equivalency of PEMS to CEMS shall be met by instantaneously comparing data collected by PEMS with that collected by a certified hardware CEMS or an EPA reference method. For a PEMS replacing a CEMS, both systems shall remain in place for at least an operating quarter collecting valid information before the CEMS is removed.

    B. For any unit at which the PEMS is installed, PEMS initial certification by the TCEQ shall occur while the unit is firing its primary fuel. The owner or operator shall:

        (1) Conduct relative accuracy testing for NO_x and O_2, or carbon dioxide (CO_2) per 40 CFR Part 60, Appendix B, Performance Specifications 2, 3, and 4, respectively, at low, medium, and high levels of the most significant operating parameter affecting NO_x emissions.

        (2) Conduct statistical test analysis at low, medium, and high levels of the most significant operating parameter affecting NO_x emissions. A minimum of 30 successive paired data points which are either 15-minute averages, 20-minute averages, or hourly averages must be collected at each tested level before a reliable statistical test can be performed.

            Data collection must be continuous at all times except when calibration of the reference method must be conducted for the purpose of collecting data for RATA.

            The following three tests must be conducted to demonstrate precision:

            (a) A T-test for bias per Appendix A, 40 CFR Part 75, § 7.6. The test shall be conducted using all paired data points collected at all three tested levels.

            (b) An F-test per 40 CFR § 75.41(c)(1). The F-test must be conducted separately at the three tested levels.

            (c) A correlation analysis per 40 CFR § 75.41(c)(2). Calculation of the correlation coefficient (Equation 27) shall be performed using all paired data points collected at all three tested levels.

        (3) For NO_x for the purpose of conducting an F-test, if the standard deviation (SD) of the reference method is less than either 3 percent of the span or 5 parts per million (ppm), use a reference method SD of the greater of 5 ppm or 3 percent of span.

(4) For diluent CO_2 or O_2 and for the purpose of conducting an F-test, if the SD of the reference method is less than 3 percent of span, use a reference method SD of 3 percent of span.

(5) For NO_x at any one tested level, if the mean value of the reference method is less than either 10 ppm or 5 percent of the standard, all statistical tests are waived for that emission parameter at that specific tested level.

(6) For either O_2 or CO_2 and at any one tested level, if the mean value of the reference method is less than 3 percent of span, all the statistical tests are waived for that diluent parameter at that specific tested level.

C. The monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of pound per million Btu at least once every week.

D. All monitoring data and quality-assurance data shall be maintained by the permit holder.

E. Any PEMS downtime shall be reported to the appropriate TCEQ Regional Director per § 117.345(d)(3) and necessary corrective action shall be taken. Quality-assured (or valid) data must be generated when the Cracking Heaters (EPN 44HTHTRS and EF4419) are operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the Cracking Heaters (EPN 44HTHTRS and EF4419) operated over the previous rolling 12-month period. Owners or operators shall demonstrate that all missing data can be accounted for in accordance with the applicable missing data procedures of 30 TAC 117.340. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

F. The appropriate TCEQ Regional Office shall be notified for each annual RATA in order to provide them the opportunity to observe the testing.

G. The owner or operator shall perform daily sensor validation. The owner or operator shall develop and implement plans that will ensure proper functioning of the monitoring systems, ensure proper accuracy and calibration of all operational parameters that affect emissions and serve as input to the predictive monitoring system, and ensure continuous operation within the certified operating range.

H. In accordance with the procedure of § 2.3.1, Appendix B of 40 CFR Part 60, a RATA must be performed every six months for each unit while firing its primary fuel. A RATA may be performed annually if the relative accuracy of the previous audit is 7.5 percent or less.

I. For each of the three successive quarters following the quarter in which initial certification was conducted, RATA and statistical testing must be conducted for at least one unit in a category of units in accordance with the procedures outlined for initial certification under Section B.

J. Any RATA exceeding 20 percent or statistical test exceeding the applicable standard shall be reported to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken.

K. When an alternative fuel is fired in a unit, PEMS must be re-certified in accordance with the certification procedures outlined for initial certification under § B. Owners or operators may justify to the satisfaction of the TCEQ Executive Director that slight changes in fuel

composition do not constitute an alternative fuel. No additional recertification procedures are required if the unit meets the current monitoring requirements when switching back to the normal fuel from an alternate fuel.

L. The system is required to provide valid emission predictions for at least 95 percent of the time that the unit being monitored is operated. The following rules for tuning without recertification shall be followed:

(1) The model did not change fundamentally.

(2) The model continues to operate within the initially certified operating ranges.

Otherwise, the system must be recertified. Any tuning must be documented, and the records must be made available during any future inspection.

M. All owners or operators shall develop a quality-assurance plan or manual that insures continuous and reliable performance of the PEMS. As part of the plan, owners or operators shall recommend a frequency for calibrating each sensor whose readout serves as an input to the model. All sensors, at a minimum, shall be calibrated as often as recommended by the manufacturer.

N. As an alternative to Special Condition 22 A.-E. the permit holder may install a continuous emission monitoring system (CEMS) to measure and record the in-stack concentration of NO_x from the Cracking Heaters (EPN 44HTHTRS: F-4401, F-4402, F-4403, F-4404, F-4405, F-4406, F -4407, F-4408, F-4409, F-4410, F-4411, F-4412, F-4413, F-4414, F-4415, F-4418 and EPN EF4419 F-4419) when in operation.

24. Opacity of emissions from cracking heaters, heaters, and decoking cyclones shall not exceed 15 percent average over a six-minute period except for those periods described in 30 TAC § 111.111.

Production Limits and Recordkeeping

25. Production rates shall not exceed 11.3 billion pounds per year of all products. The holder of this permit shall maintain records on the operation of the facility that shall include (but are not limited to) hours of operation, production rates, hours of operation of each heater unit, time period pre-regeneration gases are purged to each flare unit, and time period regeneration cycle emits to the atmosphere.

Cooling Towers

26. The VOC associated with cooling tower water shall be monitored monthly with an air stripping system meeting the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or an approved equivalent sampling method. The results of the monitoring, cooling water flow rate, and maintenance activities on the cooling water system shall be recorded. The monitoring results and cooling water hourly mass flow rate shall be used to determine cooling tower hourly VOC emissions. The rolling 12-month cooling water emission rate shall be recorded on a monthly basis and be determined by summing the VOC emissions between VOC monitoring periods over the rolling 12-month period. The emissions between VOC monitoring periods shall be obtained by multiplying the total cooling water mass flow between cooling water monitoring periods by the higher of the 2 VOC monitored results. Cooling water sampling as required by 30 TAC Chapter 115 Subchapter H may be used in lieu of this special condition.

27. Cooling water shall be sampled once a week for total dissolved solids (TDS) and once a day for conductivity. Dissolved solids in the cooling water drift are considered to be emitted as PM_{10}. The data shall result from collection of water samples from the cooling tower feed water and represent the water being cooled in the tower. Water samples should be capped upon collection, and transferred to a laboratory area for analysis. The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. The analysis method for Conductivity shall be ASTM D1125-95A and SM2510 B. Use of an alternative method shall be approved by the TCEQ Regional Director prior to its implementation.

Engine

28. The following requirements shall apply to the Diesel Engine-Driven Air Compressor (EPN OP2EN1): **(TBD)**

    A. Fuel for the engine shall be limited to ultra-low sulfur diesel (ULSD) containing no more than 15 ppmw total sulfur.

    B. The engine shall be limited to 4,500 hours per year.

    C. The engine shall be equipped with a non-resettable hour meter.

    D. Compliance with the emission factors represented in the permit amendment application (PI-1 dated November 19, 2019) shall be demonstrated by retaining a copy of the manufacturers' certificate of conformity, or through other methods receiving prior written approval of the TCEQ Executive Director

Wastewater

29. Process wastewater drains shall be equipped with water seals or equivalent; lift stations, manholes, junction boxes, any process wastewater collection system components, and conveyance, shall be equipped with a closed vent system that routes all organic vapor to a control device.

    Water seals shall be checked by visual, physical inspection or Method 21 monitoring quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls. Water seals shall be restored as necessary within 24 hours. Records shall be maintained of these inspections and corrective actions taken.

Planned Maintenance, Startup and Shutdown (MSS)

30. This permit authorizes the emissions from facilities for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

    Routine maintenance activities, as identified in Attachment B of this permit, may be tracked through work orders or their equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

    The performance of each planned MSS activity not identified in Attachment B and the emissions associated with it shall be recorded and include at least the following information:

A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;

B. the type of planned MSS activity and the reason for the planned activity;

C. the common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

D. the date and time of the MSS activity and its duration;

E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis.

31. Process units and facilities, shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements:

A. The process equipment shall be depressurized to a control device, transferred within the process unit, transferred to another process unit, transferred to a pressurized storage tank, or depressurized to a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with volatile organic compounds (VOC) partial pressure less than 0.50 pound per square inch, absolute (psia) at the highest of the actual temperature or 95°F may be opened to atmosphere and drained in accordance with Paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation, transferred within the process unit, transferred to another process unit, or transferred to a pressurized storage tank. If the VOC partial pressure is greater than 0.50 psi at either the actual temperature or 95°F, any vents in the system must be routed to a control device or a controlled recovery system. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.

C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel or closed liquid recovery system unless prevented by the physical configuration of the equipment, transferred within the process unit, transferred to another process unit, or transferred to a pressurized or an atmospheric storage tank. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.

D. If the VOC partial pressure is greater than 0.50 psi at the normal process temperature or 95°F, facilities shall be degassed using good engineering practice to ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC

concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

(1) For MSS activities identified in Attachment B, the following option may be used in lieu of item (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere until the VOC concentration has been verified to be less than 10,000 ppmv or less than 10 percent of the lower explosive limit (LEL) per the site safety procedures.

(2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement). If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of SC No. 29. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. Documented site procedures used to de-inventory equipment to a control device for safety purposes (e.g., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process;

(2) There is not an available connection to a plant control system (flare); and

(3) There is no more than 50 lbs of air contaminant to be vented to atmosphere during shutdown or start-up, as applicable.

All instances of venting directly to atmosphere per sub-paragaph E. of this condition must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B.

32. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor (RF) of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate RF

shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

VOC Concentration = Concentration as read from the instrument*RF

In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.

(2) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five-minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall be recorded and shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

(1) The air contaminant concentration measured as defined in (3) is less than 80 percent of the range of the tube and is at least 20 percent of the maximum range of the tube.

(2) The tube is used in accordance with the manufacturer's guidelines.

(3) At least two samples taken at least five minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000* mole fraction of the total air contaminants present that can be detected by the tube.

The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

C. Lower explosive limit measured with a lower explosive limit detector.

(1) The detector shall be calibrated within 30 days prior to use with a certified pentane gas standard at 58 percent of the LEL for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.

(2) A functionality test shall be performed within 24 hours prior to use on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.

(3) A certified methane gas standard equivalent to 58 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane.

D. Gas Chromatograph. As an alternative to an instrument/detector, the analysis may be conducted in a laboratory. Bag samples of the gas discharged may be drawn and taken to an onsite laboratory to be analyzed by gas chromatography (GC). A minimum of two bag

samples shall be drawn approximately ten minutes apart. A Tedlar bag, or a bag or glass container appropriate for the material to be sampled, shall be used and shall have a valve to seal gas in the bag or container. The samples shall be drawn as follows:

(1) The sample point on the equipment being cleared shall be purged sufficiently to ensure a representative sample at the sample valve.

(2) The sample bag shall be connected directly to the sample valve or to a pump that is connected directly to the sample valve.

(3) The sample valve and sample bag shall be opened to allow the bag to fill to approximately 80% of capacity. The sample connections shall be fitted such that no air is drawn into the sample bag.

(4) The two valves shall then be closed to seal the sample in the bag.

(5) The sample bag shall then be disconnected and placed in a dark container out of direct sunlight for transport to the analyzer.

(6) This process is repeated to collect additional samples.

(7) The sample shall be analyzed within 12 hours of collection.

(8) If condensation is observed in a bag sample, the sampling must be repeated using one of the modified bag sampling procedures in 40 CFR 60, Appendix A, Method 18 Section 8.

(9) At least two samples taken at least five minutes apart must satisfy the following prior to uncontrolled venting.

The laboratory GC shall meet or exceed the requirements of 40 CFR 60, Appendix A, Method 18 Sections 6 (Equipment and Supplies), 7 (Reagents and Standards), 9 (Quality Control), and 10 (Calibration and Standards). The sample shall be analyzed per Section 8.2.1.5 of Method 18, except the analysis of each bag may be performed in duplicate and use gas tight syringe through septums. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting. The recovery study for bag sampling and post analysis calibration is only required the first time a vessel is degassed and analyzed if the procedure meets the accuracy specifications of Method 18 and the analytical equipment is not modified. If the material content, temperature and pressure are the same among multiple vessels when sampling occurs, the post analysis calibration need only be conducted on sample(s) from one representative vessel.

33. This condition applies only to piping and components subject to leak detection and repair monitoring requirements. Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period:

A. cap, blind flange, plug, or second valve must be installed on the line or valve; or

B. The open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once

within the 72-hour period following the creation of the open-ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings 500 ppmv above background and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

34. Additional occurrences of MSS activities authorized by this permit may be authorized under permit by rule only if conducted in compliance with this permit's procedures, emission controls, monitoring, and recordkeeping requirements applicable to the activity.

35. Planned maintenance activities must be conducted in a manner consistent with good practice for minimizing emissions, including the use of air pollution control equipment, practices and processes. All reasonable and practical efforts to comply with Special Condition Nos. 29 through 34 must be used when conducting the planned maintenance activity, until the Commission determines that the efforts are unreasonable or impractical, or that the activity is an unplanned maintenance activity.

Netting & Offsets

36. This Prevention of Significant Deterioration (PSD) permit (PSDTX1270, 25.71 tpy NO_x project increase) is conditioned on the completion of the emission reduction project represented in the permit application (PI-1 dated September 23, 2011) as follows:

Methanol Unit Shutdown	November 2008
Total NOx Reduction:	780.4 tpy

These reductions shall occur prior to the start of operation of the facilities and activities authorized by the indicated PSD permit. The permit holder shall maintain records of these emission reductions.

Construction of the authorized facilities must begin as defined in 40 CFR § 52.21(b)(9), no later than five years after the all emission reductions identified in the NO_x netting analysis are actually accomplished. If construction does not begin as specified, the netting reductions will no longer be creditable.

This Nonattainment New Source Review (NNSR) permit (N140) is issued based on the permanent retirement of a TCEQ Emission Reduction Credit (ERC) for 25.6 tpy of VOC emissions reduction at Equistar's Chocolate Bayou Polymer Facility. This ERC provides offsets at the rate of 1.3:1 for the 19.7 tpy of VOC emissions authorized as a project increase by the indicated NNSR permit.

A. The permit holder shall use 25.6 tpy ECs of VOC from TCEQ credit certificate number 3518 to offset the 19.7 tpy VOC project emission increase for the facilities authorized by this permit at a ratio of 1.3 to 1.0. **(TBD)**

37. This Nonattainment New Source Review (NNSR) permit is issued/approved based on the requirement that the permit holder offset the project emission increase for facilities authorized by this permit prior to the commencement of operation, through participation in the TCEQ Emission Banking and Trading (EBT) Program in accordance with the rules in 30 TAC Chapter 101, Subchapter H. **(TBD)**

A. The permit holder shall use 6.9 tpy of NOx credits to offset the 5.8 tpy NOx project emission increase for the facilities authorized by this permit at a ratio of 1.20 to 1.0.

B. Prior to the commencement of operation, the permit holder shall obtain approval from the TCEQ EBT Program for the credits being used and then submit a permit alteration or amendment request to the TCEQ Air Permits Division (and copy the TCEQ Regional Office) to identify approved credits by TCEQ credit certificate number.

Standard Permit Reference

38. The following sources and/or activities are authorized under a Permit by Rule (PBR) by a Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). These lists are not intended to be all inclusive and can be altered without modifications to this permit.

Authorization	Source or Activity
Pollution Control Project (PCP) Standard Permit No. 150877	Replacement burner for heater F-4402 (EPN 44HTHTRS)

Date: TBD

Attachment A

Permit Numbers 2933, PSDTX1270, and N140

Multiple Products Approved for Storage

Tank	EPN	Service
TK-4455	44E12	Water Caustic
TK-48007	48E22	PFO
TK-48008	48E008	Slop Oil
TK-48009	48E009	Wastewater
TK-48010	48E010	Wastewater
TK-48011	48E011	Wastewater
TK-48302	48E07	PGO
TK-48303	48E08	Slop Oil
TK-48304	48E20	PFO & PGO
TK-48305	48E21	LCO & PGO
TK-4901	49E01	Olefins Feedstock, Pygas, Light Pygas
TK-4902	49E02	Olefins Feedstock, Pygas, Light Pygas
TK-4903	49E03	Olefins Feedstock, Pygas, Light Pygas, DRIPS
TK-4904	49E04	Olefins Feedstock, Pygas, Light Pygas
TK-4905	49E05	Olefins Feedstock, Pygas, Light Pygas
TK-4906	49E06	Olefins Feedstock, Pygas, Light Pygas
TK-4907	49E07	Olefins Feedstock, Pygas, Light Pygas
TK-4915	49E08	PGO
TK-4916	49E09	Benzene, DRIPs, Raw Pygas, Heartcut Pygas, Light Pygas, Heavy Pygas, Toluene
TK-4917	49E10	Light Pygas, Toluene, Heavy Pygas & Toluene
TK-4919	49E11	Light Pygas, Toluene
TK-4921	49E12	Heavy Pygas
TK-4922	49E13	Light Pygas, Toluene, Heavy Pygas, DRIPs, Raw Pygas, Heartcut Pygas
D-4311	43E01	Catalyst Mixture
D-4310	43E03	Catalyst Mixture
OP2SMLTK50	OP2SMLTK50	Additive Mixture
OP2SMLTK33	OP2SMLTK33	Antifoulant

Date: January 29, 2020

Attachment B

Permit Numbers 2933, PSDTX1270, and N140

Routine Maintenance Activities

Pump repair/replacement

Fugitive component (valve, pipe, flange) repair/replacement

Compressor repair/replacement

Heat exchanger repair/replacement

Process & Storage Vessel cleaning/repair/replacement

Date: January 29, 2020

Attachment C

Permit Numbers 2933, PSDTX1270, and N140

MSS Activities Summary

Facilities	Description	Emissions Activity	EPN
F-4419 and ancillary piping	Process unit purge/degas/drain	Vent to atmosphere	ENMSSROUT
Flare MSS	OP2 Flare	Vent to atmosphere	48E01

Date: January 29, 2020

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 2933, PSDTX1270, and N140M1

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
48E11	OP2 Cooling Tower	VOC	12.10	22.71
		PM	7.88	34.53
		PM_{10}	3.94	17.27
		$PM_{2.5}$	0.02	0.07
EOP2FUGEXP	OP2 Fugitives (5)	VOC	0.46	2.01
EOP2DECOKE2	Decoke Vent 2	CO	310.00	59.60
		VOC	0.08	0.02
		PM	1.07	0.10
		PM_{10}	1.07	0.10
		$PM_{2.5}$	1.07	0.10
ENMSSROUT	MSS Vessel – F4419 and Ancillary Piping/Equipment	VOC	4.37	0.05
EOP2ANALY	Analyzers – F4419	VOC	0.03	0.13
OP2PV48055	Analyzer Vent	VOC	0.08	0.35
48E4501A	OP-2 Analyzer	VOC	0.01	0.01
48E4301	Shelter J-4301	VOC	0.26	1.09
48E4303	Shelter J-4303	VOC	0.11	0.48
48E01	OP2 Flare (6)	VOC	978.41	43.84
		NO_x	163.46	21.53
		CO	842.37	107.94
		SO_2	33.67	6.83
43E01	D-4311 NCTBP Tank	VOC	22.19	0.47

Emission Sources - Maximum Allowable Emission Rates

43E03	D-4310 EADC Tank	VOC	33.19	0.41
43E04	Regeneration Heater I F-4351	NO_x	1.30	5.69
		SO_2	0.09	0.41
		CO	1.09	4.78
		VOC	0.07	0.28
		PM	0.10	0.46
		PM_{10}	0.10	0.46
		$PM_{2.5}$	0.10	0.46
43E05	Butene Reactors Regeneration Vent	CO	6.92	4.98
		VOC	5.86	5.54
43E06	DP Heater F-4360	NO_x	1.60	7.01
		SO_2	0.12	0.50
		CO	1.34	5.89
		VOC	0.08	0.35
		PM	0.13	0.56
		PM_{10}	0.13	0.56
		$PM_{2.5}$	0.13	0.56
43E11	DP Heater F4360C	NO_x	1.60	7.01
		SO_2	0.12	0.50
		CO	1.34	5.89
		VOC	0.08	0.35
		PM	0.13	0.56
		PM_{10}	0.13	0.56
		$PM_{2.5}$	0.13	0.56
43E07	Regeneration Heater II-F-4361	NO_x	0.40	1.75

Emission Sources - Maximum Allowable Emission Rates

		SO_2	0.03	0.13
		CO	0.34	1.47
		VOC	0.02	0.09
		PM	0.03	0.14
		PM_{10}	0.03	0.14
		$PM_{2.5}$	0.03	0.14
F44E00	Olefins II Unit Fugitives (5) (includes Flex Fugitives F43E00)	VOC	94.85	406.82
44FGWATER	OP II Wastewater Fugitives (5)	VOC	1.15	5.03
44HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: *F-4401- F-4415; F-4418; F-4419* Common Stack Steam Super Heaters: *F480001 A / B*	NO_x	494.76	2021.19
		SO_2	33.84	138.13
		CO	395.23	1611.75
		VOC	24.97	99.15
		PM	37.60	153.48
		PM_{10}	37.60	153.48
		$PM_{2.5}$	37.60	153.48
EF4419	Expansion Heater EF4419	NO_x	38.40	25.71
		CO	33.80	148.38
		SO_2	0.38	1.54
		VOC	0.64	2.57
		PM	4.23	17.00
		PM_{10}	4.23	17.00
		$PM_{2.5}$	4.23	17.00
		NH_3	2.69	11.78
44E08	Decoke Vent	CO	132.00	113.75
		PM	36.00	6.50

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	36.00	6.50
		$PM_{2.5}$	36.00	6.50
		VOC	0.11	0.10
44E10	Reactor Regenerator Vent	VOC	2.00	0.17
		SO_2	8.26	2.12
		CO	82.98	16.55
46E05	Regeneration Heater F4601	NO_x	2.50	2.63
		SO_2	0.18	0.19
		CO	2.10	2.21
		VOC	0.13	0.13
		PM	0.20	0.21
		PM_{10}	0.20	0.21
		$PM_{2.5}$	0.20	0.21
45E11	Antifoulant Storage Tank 4511	VOC	0.55	0.01
46E07	Antifoulant Storage Tank 4607	VOC	0.28	0.01
48E07	Pyrolysis Gas Oil Tank 48302	VOC	7.75	2.47
		Benzene	0.05	0.02
48E08	Slop Oil Tank 48303	VOC	0.69	2.27
		Benzene	0.62	0.16
48E22	Pyrolysis Fuel Oil Tank 48007	VOC	12.62	14.53
		Benzene	0.13	0.17
48E20	Pyrolysis Fuel Oil Tank 48304	VOC	18.61	7.54
		Benzene	0.16	0.06
48E21	Storage Tank 48305	VOC	18.61	7.48
		Benzene	0.16	0.11
49E01	Storage Tank 4901	VOC	8.38	-

Emission Sources - Maximum Allowable Emission Rates

		Benzene	1.13	-
		H_2S	<0.01	-
49E02	Storage Tank 4902	VOC	8.38	-
		Benzene	0.27	-
		H2S	<0.01	-
49E03	Storage Tank 4903	VOC	8.38	-
		Benzene	2.56	-
		H2S	<0.01	-
49E01 to 49E03	Storage Tanks (3 total)	VOC	-	36.21
		Benzene	-	1.64
		H_2S	-	0.02
49E04	Storage Tank 4904	VOC	6.03	-
		Benzene	3.71	-
		H2S	<0.01	-
49E05	Storage Tank 4905	VOC	6.03	-
		Benzene	3.71	-
		H2S	<0.01	-
49E06	Storage Tank 4906	VOC	5.81	-
		Benzene	3.31	-
		H_2S	<0.01	-
49E07	Storage Tank 4907	VOC	5.12	-
		Benzene	3.39	-
		H_2S	<0.01	-
49E04 to 49E07	Storage Tanks (4 total)	VOC	-	37.72
		Benzene	-	9.38

Emission Sources - Maximum Allowable Emission Rates

		H_2S	-	0.03
49E08	Pyrolysis Gas Oil Storage Tank 4815	VOC	0.32	0.33
		Benzene	<0.01	<0.01
49E09	Storage Tank 4916	VOC	1.50	4.03
		Benzene	0.77	2.39
49E10	Storage Tank 4917	VOC	1.84	4.03
		Benzene	0.23	0.47
49E11	Light Pyrolysis Gasoline Storage Tank 4919	VOC	1.28	2.69
		Benzene	0.41	0.89
49E12	Storage Tank 4921	VOC	2.67	2.36
		Benzene	0.73	0.62
49E13	Storage Tank 4922	VOC	3.21	7.14
		Benzene	2.29	5.02
45E02	Seal Oil Reservoir Vent	VOC	0.01	0.01
45E07	Seal Oil Reservoir Vent	VOC	0.01	0.01
48E4602	Shelter J-4602	VOC	0.01	0.02
48E4603	Shelter J-4603	VOC	0.08	0.34
48E4604	Shelter J-4604	VOC	0.01	0.05
48E4605	Shelter J-4605	VOC	0.01	0.01
48E4606	Shelter J-4606	VOC	0.01	0.01
48E4607	Shelter J-4607	VOC	0.01	0.01
OP2VJ48013	Shelter J-48013	VOC	0.14	0.56
OP2SMLTK08	Antifoulant Storage Tank 78782	VOC	0.77	0.05
OP2EN1	Diesel Engine-Driven Air Compressor	NO_x	1.73	3.88
		CO	3.02	6.80
		SO_2	<0.01	0.01
		PM	0.02	0.04

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.02	0.04
		$PM_{2.5}$	0.02	0.04
		VOC	0.16	0.37
44PVD4420	Dilution Generator Vents	VOC	1.97	1.66
		Acetone	0.03	0.03
48HTF4804A/B	Superheater Vents	VOC	4.04	0.01
OP2SMLTK12	Neutralizing Amine Tank 971971	VOC	2.15	0.01
OP2SMLTK05	Corrosion Inhibitor Tank 983323	H_3PO_4	2.15	0.01
OP2SMLTK06	Anti-foam Tote (OP-2 Cooling Tower)	VOC	2.15	0.01
44E12	Waste Caustic Tank 4455	VOC	0.43	1.62
		Benzene	0.07	0.27
44E13	Washwater Re-run Tank 4451	VOC	0.01	0.01
48E008	Slop Oil Storage Tank 48008	VOC	0.39	1.70
		Benzene	0.04	0.02
48E009	Wastewater Tank 48009	VOC	1.03	1.84
		Benzene	0.05	1.23
48E010	Wastewater Tank 48010	VOC	1.46	4.18
		Benzene	0.05	0.22
48E011	Wastewater Tank 48011	VOC	2.80	7.54
		Benzene	0.10	0.40
EFUGNH3	OP2 NH_3 Fugitives (5)	NH_3	0.05	0.24
44STMFUG	Dilution Steam Vent	VOC	0.49	1.61
		Acetone	0.01	0.02
OP2SMLTK33	Antifoulant Storage Tank	VOC	0.27	0.01
OP2SMLTK50	Additive Tank	VOC	0.45	<0.01

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3)

VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide

Emission Sources - Maximum Allowable Emission Rates

NH_3 - ammonia
H_3PO_4 - phosphoric acid
HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C

(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) Flare emission rates include routine and MSS emissions.

Date: TBD

lyondellbasell

November 8, 2019

Certified Mail #7015 0640 0002 0784 8385
EPERMITS 332770

Air Permits Review Division
Air Permits Initial Review Team - MC 161
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Re: Equistar Chemicals, LP - Channelview Chemical Complex
TCEQ Air Quality Permits No. 2933
Permit Amendment Application
Channelview, Texas Harris County
TCEQ Account ID No. HG-0033-B; RN100542281; CN600124705

Equistar Chemicals, LP (Equistar) operates an Olefins (OP2) Unit under Texas Commission on Environmental Quality (TCEQ) Air Quality Permit No. 2933. Equistar requests the amendment of this permit to update emissions from the Unit Flare.

A hard copy with the original signature of the NSR Workbook General sheet, as well, as, copies of the supporting documentation submitted through STEERS is included in this document. Required TCEQ Forms in the NSR Workbook and air dispersion modeling documentation in the EMEW Workbook have been submitted electronically. Relevant documents including emissions details, process description, flow diagrams, BACT and/or LAER analysis, area map, plot plan are included in this application submittal to assist in TCEQ's review. Equistar is requesting this application review be expedited and is sending the Surcharge Form under separate cover letter to the Cashier's Office. The amendment application fees are sent via wire transfer. If you have any questions regarding this application submittal, please contact Teresa Peneguy at (281) 452-8330.

Sincerely,

Tom Warnement
Environmental Team Leader – Air

Enclosure
cc: Director
Harris County Pollution Control Services
101 South Richey, Suite H
Pasadena, TX 77506
Certified Mail #7015 0640 0002 0784 8392

TCEQ Region 12
~~submitted via STEERS~~
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a LyondellBasell company

NEW SOURCE REVIEW PERMIT AMENDMENT APPLICATION

Permit No. 2933

Submitted by:

Equistar Chemicals, L.P. - Channelview

TCEQ Account Number HG-0033-B

Submitted to:

Texas Commission on Environmental Quality (TCEQ)
Air Permits Initial Review Team (APIRT)
Air Permits Division, MC-161
P.O. Box 13087
Austin, Texas 78711-3087

November 2019

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SECTION 1
INTRODUCTION

Equistar Chemicals, L.P. (Equistar) operates a Olefins Production (OP2) Unit under Texas Commission on Environmental Quality (TCEQ) Air Quality Permit No. 2933.

1.1 Purpose

Equistar requests the amend Air Quality Permit No. 2933, and is submitting this application as required under 30 TAC 116.111. Equistar is modifying the operation of the existing flare to meet future regulatory requirements. Additional natural gas is required to meet the anticipated operating limit to maintain a net heating value of the flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf). The site anticipates future requirements for the combustion zone that match the limits currently identified in 40 CFR 63 Subpart CC. No changes to the operation of the process unit or process vent controlled by the flare are being made with this project. All increases of volatile organic compounds (VOC) emissions will result from the minimal non-methane and non-ethane organics present in the imported natural gas supply. Additionally, the application identifies the sulfur dioxide (SO2) increases resulting from the minimal sulfur present in the natural gas. The combustion products oxides of nitrogen (NOx) and carbon monoxide (CO) that will be generated from the combustion of the additional natural gas are included in the emissions calculations.

The calculations and representations used in this permit amendment are based on best available estimates and should not be considered absolute values for all operating scenarios.

1.2 Permit History

Equistar currently operates the OP2 Unit at their Channelview, Texas manufacturing complex under TCEQ Air Permit No. 2933.

The permit was initially issued in August 1984 for the unit. The permit was last amended on December 5, 2015. The permit is currently in technical review for renewal and amendment (TCEQ Project No. 262158).

1.3 Facility Information

The project described in this application includes emissions related to the Olefins 2 Production unit at the Equistar Channelview Facility. The regulated entity number for the facility is RN100542281. The Channelview Facility includes multiple process units; however, only the OP2 Unit is affected by this amendment. The Equistar Channelview Facility is located on Sheldon Road, Channelview, TX. All units operate under a single Federal Operating Permit, Permit No. O1426.

Figure 1.1 shows the location of the Channelview Facility on the Area Map. A detailed plot plan of the Facility showing the estimated locations of emissions units at the site is also provided in Figure 1.2.

1.4 PSD and Non-attainment Review

The Prevention of Significant Deterioration (PSD) regulations define a "major modification" as a physical change or a change in the method of operation of a major stationary source that would result in a significant emissions increase and a contemporaneous significant net emissions increase of any regulated pollutant. The project is not a major modification and is not subject to PSD or Non-attainment review for VOC, Carbon Monoxide CO, or Green House Gases (GHG). The project is a major modification for NOx and the associated Table 2F is included in Appendix A.

Table 1-1 PSD and NNSR Review

Contaminants	Emissions Increases	PSD Applicability		Non- Attainment Applicability	
		Limit	Netting?	Limit	Netting?
VOC	2.16	40	No	5	No
SO2	2.81	40	No		
CO	29.49	100	No		
NOx	5.73	40	No	5	Yes

1.5 Application Contents

Key components of this application are organized as follows:

- An area map and a plot plan are provided at the end of Section 1.
- A process description and process flow diagram are included in Section 2.
- Emissions calculations methodologies are included in Section 3.
- Best Available Control Technology (BACT) and Lowest Achievable Emissions Limit (LAER) are addressed in Section 4.
- Regulatory applicability and compliance strategies are addressed in Section 5.
- Appendix A contains completed TCEQ administrative forms, PI-1 signature page from the NSR Workbook and the Expedited Permit Request Form APD-EXP
- Appendix B contains TCEQ Table 2F Project Emissions Increases.
- Appendix C contains emission rate calculations for all Emissions Points.

Figure 1-1
Area Map

Figure 1-1 Area Map
Equistar Chemicals, L.P. - Channelview

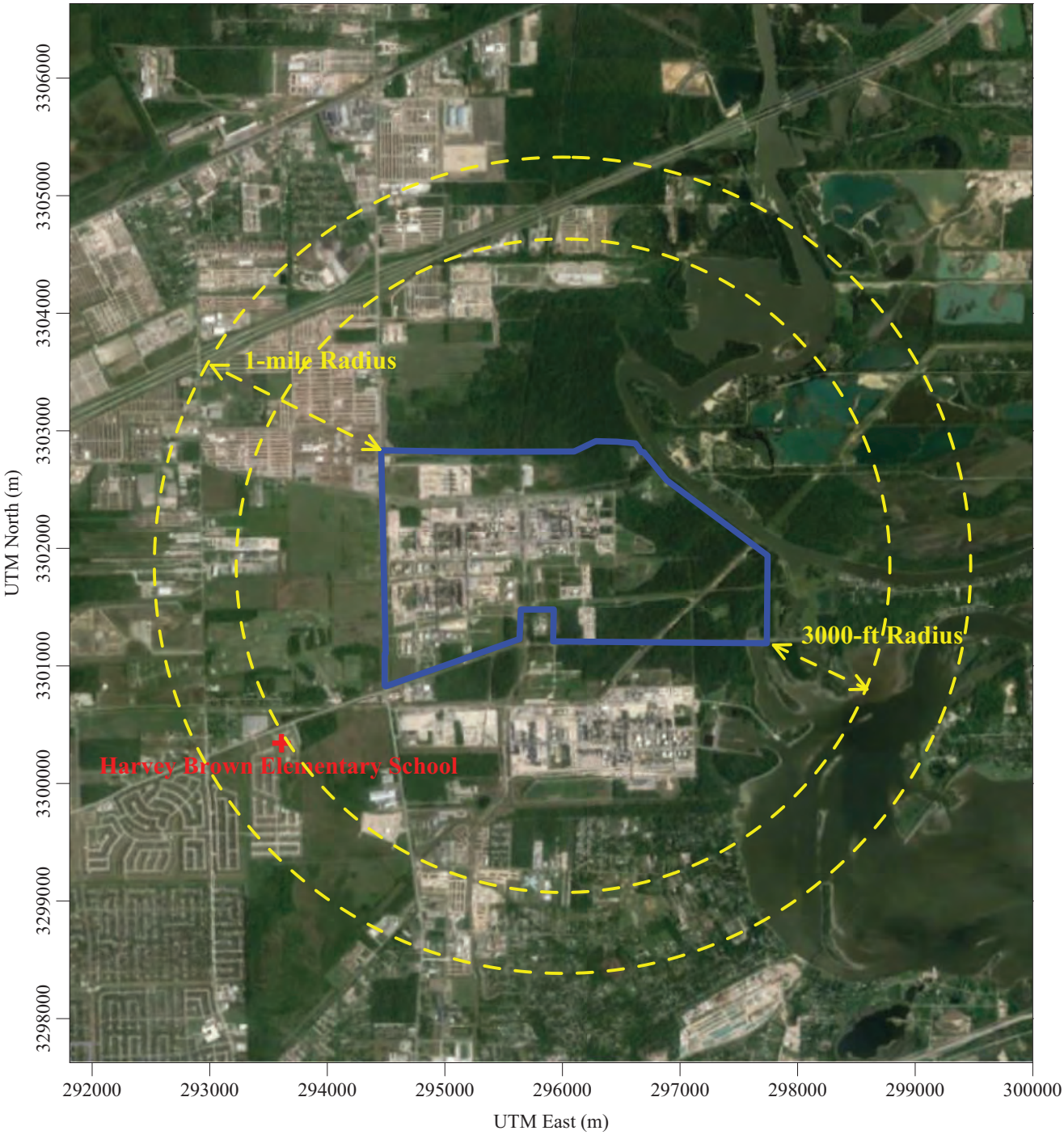
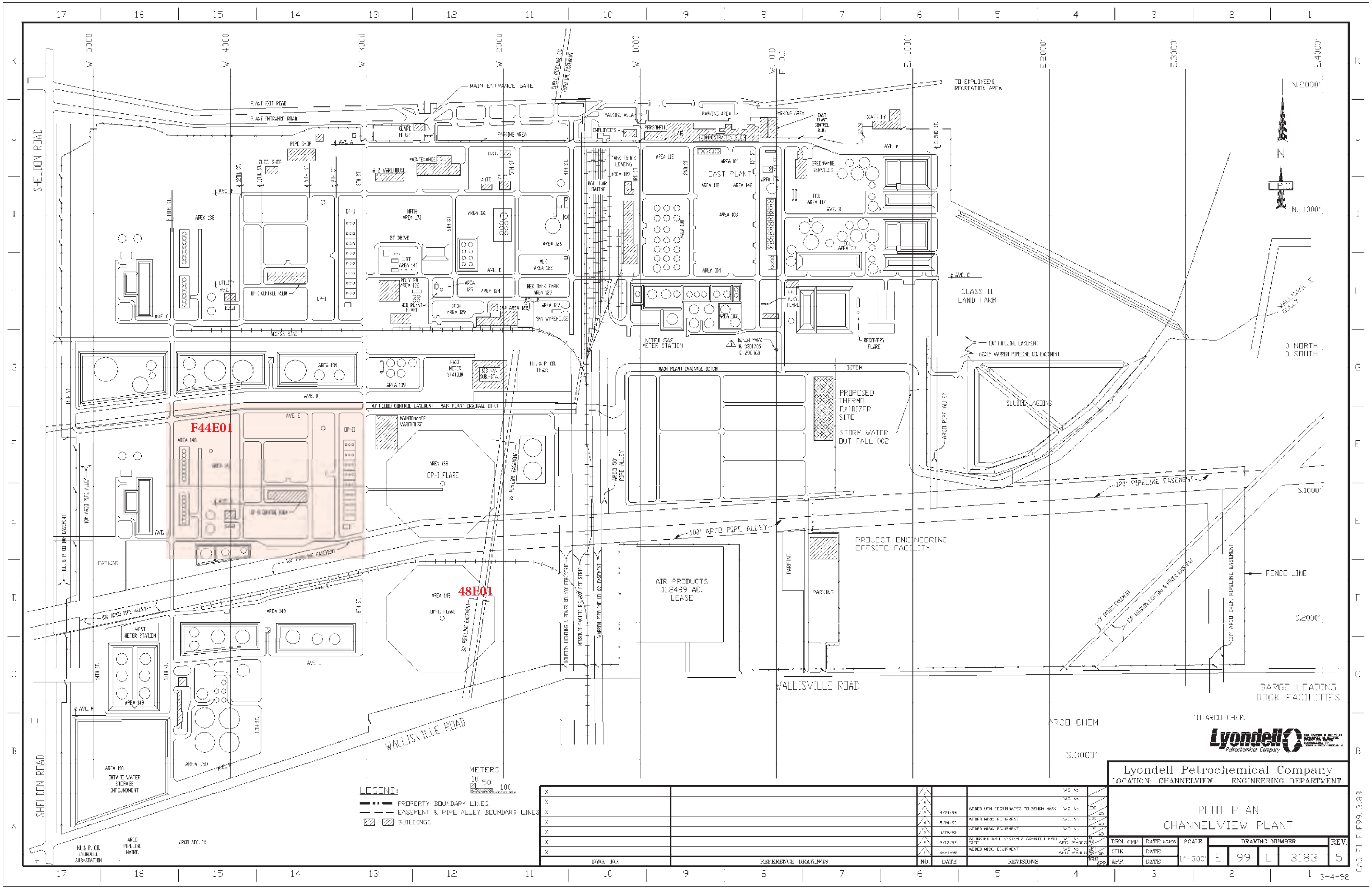


Figure 1-2
Plot Plan



F44E01
48E01
SHELDON ROAD
MAIN ENTRANCE GATE
TO EMPLOYEE'S RECREATION AREA
EAST PLANT
CLASS II LAND FARM
SLUDGE PONDS
PROPOSED THERMO OXIDIZER SITE
STORM WATER OUT FALL 002
OP-I FLARE
100' ARCO PIPE ALLEY
PROJECT ENGINEERING OFFSITE FACILITY
AIR PRODUCTS 11.2489 AC. LEASE
FENCE LINE
WALLISVILLE ROAD
ARCO CHEM
BARGE LOADING DOCK FACILITIES
METERS
LEGEND:
PROPERTY BOUNDARY LINES
EASEMENT & PIPE ALLEY BOUNDARY LINES
BUILDINGS
Lyondell Petrochemical Company
LOCATION: CHANNELVIEW ENGINEERING DEPARTMENT
PLOT PLAN
CHANNELVIEW PLANT
E 99 L 3183
REV. 5

SECTION 2
PROCESS DESCRIPTION

2.1 Process Description

The OP2 Unit consists of cracking furnaces, where pyrolysis (cracking by heat) occurs, fractionation equipment to separate and purify the raw products, catalytic reactors to convert some by-products, heat exchangers to control process temperatures and provide energy efficiency, liquid pumps and gaseous compressors. Additionally, there is utility equipment to support utilities to the olefins process operations.

Cracking & Quench (C&Q) is the front-end of the unit where feedstock is cracked into smaller chain molecules, and initial fractions are produced. The cracking furnaces (EPNs: 44HTHRTRS, EF4419) accommodate a variety of feed stocks. Liquid feeds to the cracking furnaces are generally pumped into tankage (EPNs: 49E01 – 49E07) and then routed to the cracking furnaces. Natural gas liquids can be fed directly to the furnaces from pipelines. The effluent from the cracking furnaces is directed through heat exchangers to halt the reactions and recovery energy. The stream, generally referred to as cracked gas, is then directed to the compression and fractionation step.

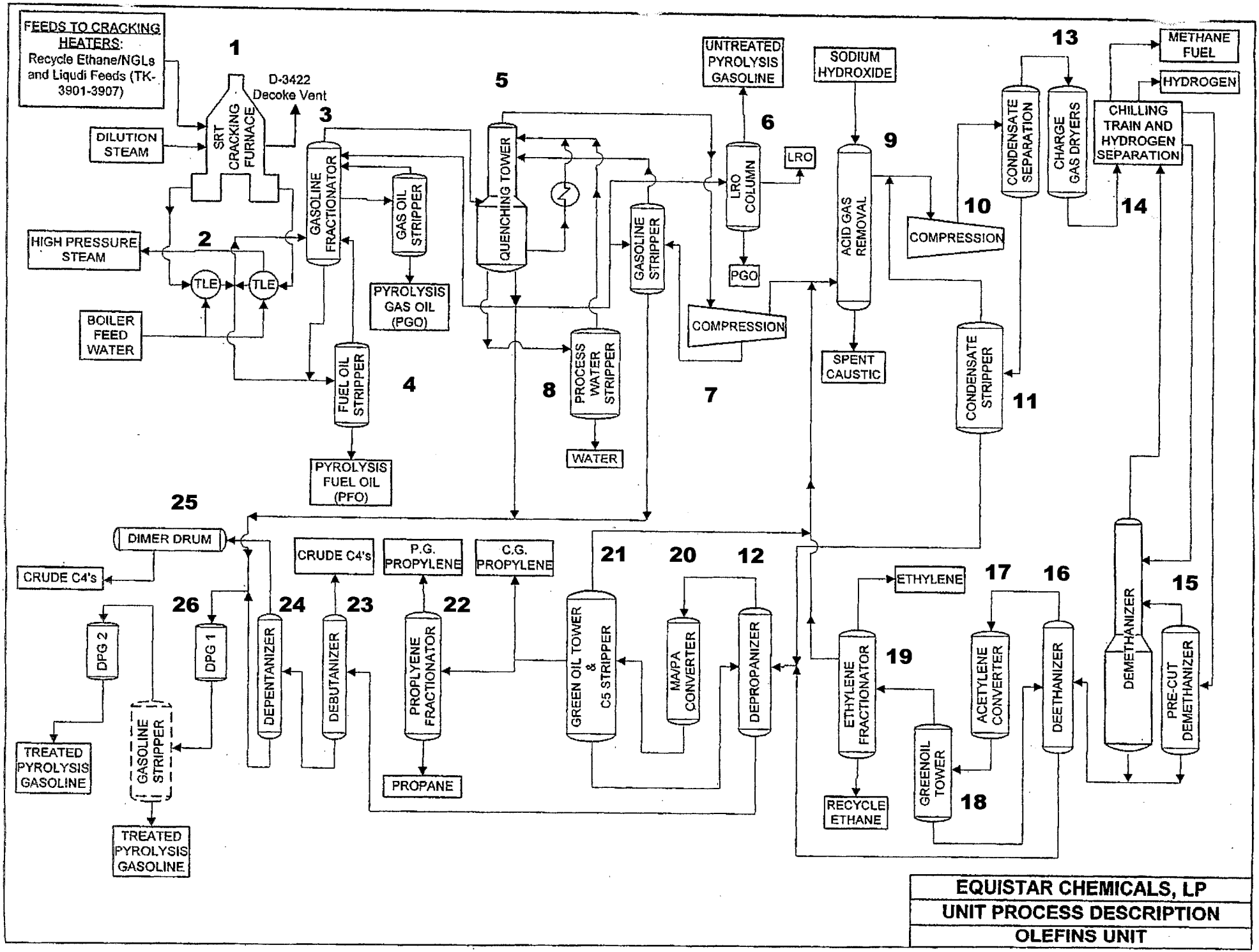
The cracked gas then goes through a series of compression and fractionation steps where the primary products, ethylene and propylene are separated from the by-products. The by-products are also fractionated into several different by-product streams, such as ethane, propane, C4 products, C5 products, pyrolysis fuel oil, pyrolysis gasoline and other higher carbon hydrocarbons. Methane and hydrogen removed from the cracked gas is used as fuel gas for the fired sources within the unit. Acetylene in the cracked gas is converted to ethylene and ethane in the Acetylene converters and methyl acetylene/propadiene (MAPD) in the cracked gas is converted to propylene and propane in the MAPD converters.

The DPG equipment processes pyrolysis gasoline feed. In the DPG equipment, the di-olefins are converted to mono-olefins. The effluent from these reactors is sent to other units at the site for further fractionated into light and heavy gasoline fractions.

The Acetylene, MAPD and DPG converters are regenerated through a common stack (The converters (EPN: 44E10) are regenerated using the Regen Heater (EPN: 47E03).

Process water is used as steam within the unit (EPNs: 44PVD4420 and 44FUGSTM). Purchased steam is also used within the unit and superheated using the Superheaters (F480001 A/B). Cooling water is supplied by a closed look system between the Cooling Tower (EPN: 48E11) and heat exchangers.

Figure 2-1
OP2 Unit Process Flow Diagram


FEEDS TO CRACKING HEATERS: Recycle Ethane/NGLs and Liquid Feeds (TK-3901-3907)
1
D-3422 Decoke Vent
SRT CRACKING FURNACE
DILUTION STEAM
HIGH PRESSURE STEAM
2
TLE
TLE
BOILER FEED WATER
3
GASOLINE FRACTIONATOR
GAS OIL STRIPPER
PYROLYSIS GAS OIL (PGO)
FUEL OIL STRIPPER
4
PYROLYSIS FUEL OIL (PFO)
5
QUENCHING TOWER
GASOLINE STRIPPER
8
PROCESS WATER STRIPPER
WATER
UNTREATED PYROLYSIS GASOLINE
6
LRO COLUMN
LRO
PGO
7
COMPRESSION
SODIUM HYDROXIDE
9
ACID GAS REMOVAL
SPENT CAUSTIC
10
COMPRESSION
13
CONDENSATE SEPARATION
CHARGE GAS DRYERS
14
METHANE FUEL
HYDROGEN
CHILLING TRAIN AND HYDROGEN SEPARATION
CONDENSATE STRIPPER
11
25
DIMER DRUM
CRUDE C4's
26
DPG 2
DPG 1
TREATED PYROLYSIS GASOLINE
GASOLINE STRIPPER
TREATED PYROLYSIS GASOLINE
24
DEPENTANIZER
CRUDE C4's
23
DEBUTANIZER
P.G. PROPYLENE
C.G. PROPYLENE
22
PROPYLENE FRACTIONATOR
PROPANE
21
GREEN OIL TOWER & C5 STRIPPER
20
MA/PA CONVERTER
12
DEPROPANIZER
ETHYLENE
17
ACETYLENE CONVERTER
16
DEETHANIZER
15
DEMETHANIZER
PRE-CUT DEMETHANIZER
ETHYLENE FRACTIONATOR
19
RECYCLE ETHANE
GREENOIL TOWER
18
EQUISTAR CHEMICALS, LP
UNIT PROCESS DESCRIPTION
OLEFINS UNIT

SECTION 3
EMISSION CALCULATION METHODOLOGY

This section describes the methodology used to calculate Potential-to-Emit (PTE) emissions from the sources affected by this project using BACT level controls. Emissions calculations are being provided electronically per TCEQ guidance.

3.1 Flare Emissions

The VOC emissions are estimated based on natural gas flow and the emission factor in EPA AP-42 for the combustion of natural gas. The flare is designed to ensure that the flares maintain compliance with NSR Permit No. 2933 and with applicable NSPS and State regulations when in use. NOx and CO emissions are estimated using emissions factors provided in TCEQ publication RG-360A/11, Appendix A: Technical Supplement, Table A-6, "Air Permit Flare Emissions Factors," revised February 2012. The unit operates a steam-assist flare to control vents from the process unit.

SECTION 4
BEST AVAILABLE CONTROL TECHNOLOGY AND LOWEST ACHIEVABLE EMISSION REDUCTION

In accordance with 30 TAC Chapter 116, §116.111(a)(2)(C), any new or modified facility must utilize BACT, with consideration given to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility. Below is a BACT and LAER evaluation of the OP2 Unit flare.

4.1 Flare

The flare meets at least 98% destruction efficiency (DRE) for organic compounds and 99% DRE for organic compounds with 3 carbon or less, which meets BACT. The emission factors for NOx and CO emissions from a steam-assisted flare were used and meet BACT for CO and LAER for NOx. The EPA RACT/BACT/LAER Clearinghouse identified LAER for NOx to be operating flare with good combustion practices in compliance with 40 CFR 60.18 and/or 40 CFR 63.11. The TCEQ published 0.068 lb/MMBtu NOx factor for low BTU steam-assisted flares was the lowest reported emission factor for an elevated flare during the last 10 years. A copy of the results of the Clearinghouse search is attached.

SECTION 5
REGULATORY APPLICABILITY

Pursuant to TCEQ 30 TAC §116.111, Equistar will meet all rules and regulations of the TCEQ and the intent of the TCAA for the emission sources and activities addressed in this permit amendment application, as follows:

- §116.111(a)(1) – A completed Form PI-1 has been signed by an authorized representative of Equistar and is included in Appendix A.
- §116.111(a)(2)(A) through (L) – These items are addressed individually below.
- §116.111(b) – Equistar will comply with applicable 30 TAC 39 and 30 TAC 55 public notice and public participation requirements for this permit amendment application.

5.1 General Application Requirements - §116.111

The emissions associated with the proposed OP2 Unit project will comply with all applicable air quality rules and regulations and with the intent of the TCAA, including protection of the health and the physical property of people, as required by §116.111(a)(2)(A)(i). Following is a summary of rules and regulations as they apply to the proposed project:

30 TAC 101 - General Rules: The facility will be operated in accordance with the General Rules relating to circumvention, nuisance, traffic hazard, notification requirements for major upset, notification requirements for unplanned maintenance, sampling, sampling ports, emission inventory requirements, sampling procedures and terminology, compliance with Environmental Protection Agency (EPA) Standards, emissions fees, and all other applicable General Rules.

30 TAC 111 - Visible Emissions and Particulate Matter: Equistar will comply with all applicable requirements under this chapter.

30 TAC 112 - Sulfur Compounds: Equistar will comply with all applicable requirements under this chapter.

30 TAC 113 - Toxic Materials: TCEQ has incorporated MACT standards (40 CFR 63) into Chapter 113 by reference. The proposed facility will comply with all applicable provisions of Chapter 113 concerning control, recordkeeping, reporting, and monitoring requirements.

30 TAC 114 - Motor Vehicles: This provision of the rule controls the emissions from motor vehicles and does not apply to the facilities under consideration in this permit application.

30 TAC 115 - Volatile Organic Compounds: The proposed facility is located in Harris County and is regulated by the following Rules that are applicable to this permit application:

Subchapter B Division 2 – Vent Gas Control

Equistar will comply with all the applicable control, monitoring, testing, and recordkeeping requirements listed in this subchapter.

30 TAC 116 - Permits for New Construction or Modification: Equistar is complying with the requirements of Chapter 116 by submitting this permit application and as outlined below for each of the following sections:

Rule 116.111(a)(2)(A) Protection of public health and welfare

As outlined below, the emissions from Equistar will comply with all air quality rules and regulations and with the intent of the TCAA, including protection of the health and physical property of the people.

Rule 116.111(a)(2)(B) Measurement of Emissions

The proposed facility will have provisions for measuring the emission of significant air contaminants as determined by the Executive Director.

Rule 116.111(a)(2)(C) Best Available Control Technology (BACT)

Section 4 of this application presents a discussion of BACT for the modified facilities associated with this application.

Rule 116.111(a)(2)(D) Federal New Source Performance Standards (NSPS)

Equistar will comply with all applicable 40 CFR Part 60 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(E) National Emission Standards for HAPs (NESHAP)

Equistar will comply with all applicable 40 CFR Part 61 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(F) Maximum Achievable Control Technology (MACT)

Equistar will comply with all applicable 40 CFR Part 63 controls, recordkeeping, reporting, and monitoring requirements.

Rule 116.111(a)(2)(G) Performance Demonstration

The proposed facilities are expected to perform as represented in this application.

Rule 116.111(a)(2)(H) Nonattainment Review

The facility is located in a nonattainment area for VOC and NO_x. See Section 1.4, PSD and Non-attainment Review, for details.

Rule 116.111(a)(2)(I) Prevention of Significant Deterioration (PSD) review

The facility is located in an attainment area for SO2, PM10, CO, and lead.

See Section 1.4, PSD and Non-attainment Review, for details.

Rule 116.111(a)(2)(J) Air Dispersion Modeling

Air dispersion modeling is being submitted with this application.

Rule 116.111(a)(2)(K) Hazardous Air Pollutants

Equistar will comply with all applicable requirements under Subchapter E of this chapter.

Rule 116. 111(a)(2)(L) Mass Cap and Trade Allowances

Equistar Channelview Facility is located in the Houston/Galveston/Brazoria area. Equistar has sufficient NOx allowances to demonstrate compliance with the mass emissions cap and trade program.

30 TAC 117 - Nitrogen Compounds: The provision of the rule does not apply to the proposed facilities considered in this permit application.

30 TAC 118 - Air Pollution Episodes: The facility will be operated in compliance with the rules relating to generalize a localized air pollution episode. An Emissions Reduction Plan is maintained as required by §118.5.

30 TAC 122 - Federal Operating Permits: The Channelview Facility operates under Federal Operating Permit No. O1426. The Title V Permit will be revised to reference the changes in applicable requirements resulting from the amendment to the NSR permit.

APPENDIX A
ADMINISTRATIVE CONSIDERATIONS AND APPLICATION FORMS

Permit Fee Calculation

The amendment application fee is calculated according to 30 TAC §116.141(a), Determination of Fees, which specifies that the fee for an amendment is based on the capital cost of the project. The permit application fee is calculated and summarized on the TCEQ Table 30 included in the NSR Workbook.

The permit amendment fee of $3,000 is provided with this application. The fee payment tracer number for the total amount including both fees is included in this appendix.

Compliance History

Equistar is an existing site greater than 5-years old. Equistar requests that TCEQ compile the history of the site.

Administratively Application Forms

The administrative information has been completed in the NSR Workbook and sent electronically to the Air Permit Initial Review Team. Additional the project EMEW for SCREEN workbook containing the modeling review information has been provided electronically.

Texas Commission on Environmental Quality
Form PI-1 General Application
General

Date: 10/01/2019
Permit #: 2933
Company: Equistar

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Equistar Chemicals, LP

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Kim
Last Name:	Foley
Title:	Site Manager
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-862-5150
Fax Number:	
Email Address:	kim.foley@lyb.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting
Company or Legal Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77503
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	600124705

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	100542281

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: https://www.tceq.texas.gov/agency/financial/fees/delin	No

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Amendment	2933
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Not applicable	
Nonattainment: *Not applicable, Initial, Major Modification*	Major Modification	N140
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Not applicable	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	Combination (list below)
List the permit number, registration number, and/or PBR number.	83799, 106.263

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No

Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference. At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo:

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No

Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits

Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	Yes
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	O1426

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Harris
TCEQ Region	Region 12
County attainment status as of Sept. 23, 2019	Serious Ozone nonattainment
Street Address:	8280 Sheldon Road
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Channelview
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	77530
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	029:49:56
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	095:06:43
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Channelview Facility
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	Olefins Unit

Are there any schools located within 3,000 feet of the site boundary?	Yes

C. Portable Facility

Permanent or portable facility?	Permanent

D. Industry Type

Principal Company Product/Business:	SOCMI Chemicals

A list of SIC codes can be found at:
https://www.naics.com/sic-codes-industry-drilldown/

Principal SIC code:	2869

NAICS codes and conversions between NAICS and SIC Codes are available at:
https://www.census.gov/eos/www/naics/

Principal NAICS code:	325199

E. State Senator and Representative for this site

This information can be found at (note, the website is not compatible to Internet Explorer):
https://wrm.capitol.texas.gov/

State Senator:	John Whitmire
District:	15
State Representative:	Ana Hernandez
District:	143

V. Project Information

A. Description

Provide a brief description of the project that is requested. (Limited to 500 characters).	Natural gas is being added to flare to meet furture regulatory flame zone heat value requirements for flares.

B. Project Timing

Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).

Projected Start of Construction:	TBD
Projected Start of Operation:	TBD

C. Enforcement Projects

Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No

D. Operating Schedule

Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials

All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)

A. Confidential Application Materials

Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached?	No
https://www.tceq.texas.gov/assets/public/permitting/centralregistry/10400.docx	
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. You do not need to submit calculations for sources which are not changing emission rates with this project. Please note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review. It can be emailed with the submittal of this application workbook.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
H. Is a material balance (Table 2, Form 10155) attached?	Yes

I. Is a list of MSS activities attached?	N/A
J. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
K. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Kim Foley
Signature:	
Original signature is required.	
Date:	

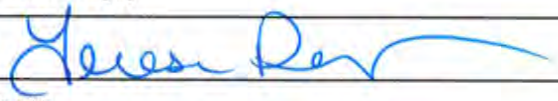
Basis2 Receipt Report by Endorsement Number

NOV-18-19 04:37 PM

Acct. #: PAF **Account Name:** PERMIT AMENDMENT FEES (AIR)

Paid For	Endors. #	Ref #2	Paid In By	PayTyp	Chk #	Card#	Bank Slip	Tran.Date	Receipt Amnt.
OLEFINS 2	WRS0019807	2933	LYO EQUISTAR CHE	WT	WIRE		BS00076778	18-NOV-19	$3000.00

Form APD-EXP Expedited Permitting Request

I. Contact Information	
Company or Other Legal Customer Name: Equistar Chemicals, LP	
Customer Reference Number (CN): 600124705	
Regulated Entity Number (RN): 100542281	
Company Official or Technical Contact Name: Teresa Peneguy	
Phone Number: 281-452-8330	
Email: teresa.peneguy@lyb.com	
II. Project Information	
Facility Type: Channelview Facility, OP2 Unit	
Permit Number: 2933	
Project Number: TBD	
III. Economic Justification	
The purpose of the application associated with this request to expedite will benefit the economy of this state or an area of this state.	☒ YES ☐ NO
IV. Delinquent Fees and Penalties	
Applications will not be expedited if any delinquent fees and/or penalties are owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/delin/index.html.	
V. Signature	
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. As the applicant, I commit to fulfilling all expectations of the expedited permitting program and application requirements promptly. Failure to meet any expectation or requirement may cause my application to be removed from the expedited permitting program and possibly voided at the discretion of the TCEQ Executive Director. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.	
Name: Teresa Peneguy	
Signature: 	
Date: 11/8/2019	

Reset Form

Basis2 Receipt Report by Endorsement Number

NOV-18-19 04:36 PM

Acct. #: APS **Account Name:** AIR PERMIT EXPEDITED FEE

Paid For	Endors. #	Ref #2	Paid In By	PayTyp	Chk #	Card#	Bank Slip	Tran.Date	Receipt Amnt.
2933/OLEFINS 2	WRS0019800		LYO EQUISTAR CHE	WT	WIRE		BS00076778	18-NOV-19	$20000.00

APPENDIX B
TECHNICAL APPLICATION TABLES

Technical Application Tables

The following table is included in this appendix:

Table 2F – Project Increases

TABLE 2F
PROJECT EMISSION INCREASE

Pollutant[1]:	Nox	Permit:	2933
Baseline Period:	N/A new stream	to	

	Affected or Modified Facilities[2]		Permit No.	Actual Emissions[3]	Baseline Emissions[4]	Proposed Emissions[5]	Project Actual Emissions	Difference (B-A)[6]	Correction[7]	Project Increase[8]
	FIN	EPN								
1.	48E01	48E01	2933	0	0	5.73	5.73	5.73		5.73
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
								Page Subtotal[9]		5.73

[1] Individual Table 2F=s should be used to summarize the project emission increase for each criteria pollutant

[2] Emission Point Number as designated in NSR Permit or Emissions Inventory

[3] All records and calculations for these values must be available upon request

[4] Correct actual emissions for currently applicable rule or permit requirements, and periods of non-compliance. These corrections, as well as any MSS previously demonstrated under 30 TAC 101, should be explained in the Table 2F supplement

[5] If projected actual emission is used it must be noted in the next column and the basis for the projection identified in the Table 2F supplement

[6] Proposed Emissions (column B) minus Baseline Emissions (column A)

[7] Correction made to emission increase for what portion could have been accommodated during the baseline period. The justification and basis for this estimate must be provided in the Table 2F supplement

[8] Obtained by subtracting the correction from the difference. Must be a positive number.

[9] Sum all values for this page.

APPENDIX C
EMISSION CALCULATIONS

Included in this appendix is the emissions calculations for the additional natural gas to the flare.

Flare Emissions
Natural Gas addition

Emission Factors

NOx	0.068	lb/MMBtu	TCEQ EI Guidance for Steam-assist flare
CO	0.3503	lb/MMBtu	TCEQ EI Guidance for Steam-assist flare
SO2	5	gr/100 dscf	vendor spec
	2.5	gr/100 dscf	historically used factor
VOC	5.5	lb/MMscf	AP-42 Natural Gas Combustion
	1020	Btu/scf	

EPN: 48E01
Avg Natural Gas 89,741 scfh
Max Natural Gas 240,000 scfh

Max Hourly	Current Auth	Nat Gas Increase	Total
	lb/hr	lb/hr	lb/hr
NOx	189.68	16.65	206.33
CO	974.53	85.75	1060.28
SO2		3.43	
VOC	977.09	1.32	978.41

Annual	Current Auth	Nat Gas Increase	Total
	tpy	tpy	tpy
NOx	15.8	5.73	21.53
CO	144.75	29.49	174.24
SO2	4.02	2.81	6.83
VOC	41.68	2.16	43.84

Sample Calculation
Hourly NOx

$$\frac{240{,}000\ \text{scf}}{\text{hr}} \times \frac{1020\ \text{Btu}}{\text{scf}} \times \frac{\text{MMBtu}}{10^6\ \text{Btu}} \times \frac{0.068\ \text{lb}}{\text{MMBtu}} = \frac{16.65\ \text{lb NOx}}{\text{hr}}$$

Annual SO2

$$\frac{89{,}741\ \text{scf}}{\text{hr}} \times \frac{\text{MMscf}}{10^6\ \text{scf}} \times \frac{2.5\ \text{gr}}{100\ \text{dscf}} \times \frac{\text{lb S}}{7000\ \text{gr}} \times \frac{2\ \text{lb SO2}}{\text{lb S}} \times \frac{8760\ \text{hr}}{\text{yr}} \times \frac{\text{ton}}{2000\ \text{lb}} = \frac{2.81\ \text{ton SO2}}{\text{hr}}$$

SO2 existing hourly convert to 5 S grain/ 100 dscf basis

$$\frac{\text{current auth}}{2.5\ \text{gr} / 100\ \text{dscf}} \times \frac{5\ \text{gr}}{100\ \text{dscf}}$$

Unit	Permit before SP	Factor current	Current lb/	Current tp	Revised lb/hr	Revised tpy
OP2	2933	2.5 gr/100 dscf	15.12	4.02	30.24	4.02
Add Nat Gas		5 gr/100 dscf			3.43	2.81
			15.12	4.02	33.67	6.83

	lb/hr
Current Auth	15.12
Increase	18.55
Proposed Allowable	33.67

I. Additional Questions for Specific NSR Minor Permit Actions

V. Nonattainment Permits	
Complete the offsets section of the Federal Applicability sheet of this workbook.	Yes
Does the application contain a detailed LAER analysis? (attachment or as notes on the BACT sheet of this workbook)	Yes
Does the application contain an analysis of alternative sites, sizes, production processes, and control techniques for the proposed source? The analysis must demonstrate that the benefits of the proposed location and source configuration significantly outweigh the environmental and social costs of that locati+A124on.	Yes

VIII. Federal Regulatory Questions
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.
A. Title 40 CFR Part 60

Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	A, K, Ka, Kb, VV, NNN
B. Title 40 CFR Part 61	
Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	A, FF, V
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	A, F, G, H, YY, FFFF, DDDDD, ZZZZ

IX. Emissions Review

A. Impacts Analysis

Any change that results in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet of this workbook.

Does this project require an impacts analysis?	Yes

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade

Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	Yes
Is Mass Emissions Cap and Trade applicable to the new or modified facilities?	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Permit primary industry (must be selected for workbook to function)

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
Not New/Modified	Yes	F44E00	F44E00	Olefins II Unit Fugitives	VOC	94.85	406.82	0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	44FGWATER	44FGWATER	OP-II Wastewater Fugitives	VOC	1.15	5.03	0	0	Wastewater
Not New/Modified	Yes	OP2FUGEXP	EOP2FUGEXP	OP2 Fugitives	VOC	0.46	2.01	0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	44E08	44E08	Decoke Vent	CO	132	113.75	0	0	Process Vent
Not New/Modified	Yes				PM	36	6.5	0	0	
Not New/Modified	Yes				PM10	36	6.5	0	0	
Not New/Modified	Yes				PM2.5	36	6.5	0	0	
Not New/Modified	Yes				VOC	0.11	0.1	0	0	
Not New/Modified	Yes	OP2DECOKE2	EOP2DECOKE2	Decoke Vent 2	CO	310	59.6	0	0	Process Vent
Not New/Modified	Yes				VOC	0.08	0.02	0	0	
Not New/Modified	Yes				PM	1.07	0.1	0	0	
Not New/Modified	Yes				PM10	1.07	0.1	0	0	
Not New/Modified	Yes				PM2.5	1.07	0.1	0	0	
Not New/Modified	Yes	44E10	44E10	Reactor Regeneration Vent	CO	82.98	16.55	0	0	Process Vent
Not New/Modified	Yes				VOC	2	0.17	0	0	
Not New/Modified	Yes				SO2	8.26	2.12	0	0	
Not New/Modified	Yes	44HTHTRS	44HTHTRS	Pyrolysis and Steam Production Common Stack Cracking Heaters: F-4401 - F-4415; F-4418; F-4419 Common Stack Steam Super Heaters: F480001 A/B	NOx	494.76	2021.19	0	0	Furnace
Not New/Modified	Yes				CO	395.23	1611.75	0	0	
Not New/Modified	Yes				SO2	33.84	138.13	0	0	
Not New/Modified	Yes				PM	37.6	153.48	0	0	
Not New/Modified	Yes				PM10	37.6	153.48	0	0	
Not New/Modified	Yes				PM2.5	37.6	153.48	0	0	
Not New/Modified	Yes				VOC	24.97	99.15	0	0	
Not New/Modified	No	44HTHTRS	F4401 / F4402	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4403 / F4404	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4405 / F4406	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4407 / F4408	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4409 / F4410	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4411 / F4412	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4413 / F4414	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4418	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F4415	Cracking Heaters				0	0	Furnace
Not New/Modified	No	44HTHTRS	F48001 A/B	Superheaters				0	0	Heater
Not New/Modified	Yes	EF4419	EF4419	Expansion Heater: EF4419	NOx	38.4	25.71	0	0	Furnace
Not New/Modified	Yes				CO	33.8	148.38	0	0	
Not New/Modified	Yes				SO2	0.38	1.54	0	0	
Not New/Modified	Yes				PM	4.23	17	0	0	
Not New/Modified	Yes				PM10	4.23	17	0	0	
Not New/Modified	Yes				PM2.5	4.23	17	0	0	
Not New/Modified	Yes				NH3	2.69	11.78	0	0	
Not New/Modified	Yes				VOC	0.64	2.57	0	0	
Not New/Modified	Yes	46E05	46E05	Regeneration Heater F4601	NOx	2.5	2.63	0	0	Heater
Not New/Modified	Yes				CO	2.1	2.21	0	0	
Not New/Modified	Yes				SO2	0.18	0.19	0	0	
Not New/Modified	Yes				VOC	0.13	0.13	0	0	
Not New/Modified	Yes				PM	0.2	0.21	0	0	
Not New/Modified	Yes				PM10	0.2	0.21	0	0	
Not New/Modified	Yes				PM2.5	0.2	0.21	0	0	
Not New/Modified	Yes	43E04	43E04	Regeneration Heater I - F4351	NOx	1.3	5.69	0	0	Heater
Not New/Modified	Yes				CO	1.09	4.78	0	0	
Not New/Modified	Yes				SO2	0.09	0.41	0	0	
Not New/Modified	Yes				PM	0.1	0.46	0	0	
Not New/Modified	Yes				PM10	0.1	0.46	0	0	
Not New/Modified	Yes				PM2.5	0.1	0.46	0	0	
Not New/Modified	Yes				VOC	0.07	0.28	0	0	
Not New/Modified	Yes	43HTF4360	43E06	DP Heater F4360	NOx	1.6	7.01	0	0	Heater
Not New/Modified	Yes				CO	1.34	5.89	0	0	
Not New/Modified	Yes				SO2	0.12	0.5	0	0	
Not New/Modified	Yes				PM	0.13	0.56	0	0	
Not New/Modified	Yes				PM10	0.13	0.56	0	0	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
Not New/Modified	Yes				PM2.5	0.13	0.56	0	0	
Not New/Modified	Yes				VOC	0.08	0.35	0	0	
Not New/Modified	Yes	43E11	43E11	DP Heater F4360C	NOx	1.6	7.01	0	0	Heater
Not New/Modified	Yes				CO	1.34	5.89	0	0	
Not New/Modified	Yes				SO2	0.12	0.5	0	0	
Not New/Modified	Yes				PM	0.13	0.56	0	0	
Not New/Modified	Yes				PM10	0.13	0.56	0	0	
Not New/Modified	Yes				PM2.5	0.13	0.56	0	0	
Not New/Modified	Yes				VOC	0.08	0.35	0	0	
Not New/Modified	Yes	43E07	43E07	Regeneration Heater II F4361	NOx	0.4	1.75	0	0	Heater
Not New/Modified	Yes				CO	0.34	1.47	0	0	
Not New/Modified	Yes				SO2	0.03	0.13	0	0	
Not New/Modified	Yes				PM	0.03	0.14	0	0	
Not New/Modified	Yes				PM10	0.03	0.14	0	0	
Not New/Modified	Yes				PM2.5	0.03	0.14	0	0	
Not New/Modified	Yes				VOC	0.02	0.09	0	0	
New/Modified	Yes	48FL4801P/F	48E01	OP2 Flare	NOx	163.46	21.53	*16.65*	*5.73*	Control: Flare
New/Modified	Yes				CO	842.37	107.94	*85.75*	*29.49*	
New/Modified	Yes				SO2	33.67	6.83	*18.55*	*2.81*	
New/Modified	Yes				VOC	978.41	43.84	*1.31*	*2.16*	
Not New/Modified	Yes	43E05	43E05	Butene Reactors Regen	CO	6.92	4.98	0	0	Process Vent
Not New/Modified	Yes				VOC	5.86	5.54	0	0	
Not New/Modified	Yes	45E02	45E02	Seal Oil Reservoir	VOC	0.01	0.01	0	0	Process Vent
Not New/Modified	Yes	45E07	45E07	Seal Oil Reservoir	VOC	0.01	0.01	0	0	Process Vent
Not New/Modified	Yes	48E4602	48E4602	Shelter J-4602	VOC	0.01	0.02	0	0	Process Vent
Not New/Modified	Yes	48E4603	48E4603	Shelter J-4603	VOC	0.08	0.34	0	0	Process Vent
Not New/Modified	Yes	48E4604	48E4604	Shelter J-4604	VOC	0.01	0.05	0	0	Process Vent
Not New/Modified	Yes	48E4605	48E4605	Shelter J-4605	VOC	0.01	0.01	0	0	Process Vent
Not New/Modified	Yes	48E4606	48E4606	Shelter J-4606	VOC	0.01	0.01	0	0	Process Vent
Not New/Modified	Yes	OP2VJ4607	48E4607	Shelter J-4607	VOC	0.01	0.01	0	0	Process Vent
Not New/Modified	Yes	OP2VJ48013	OP2VJ48013	Shelter J-48013	VOC	0.14	0.56	0	0	Process Vent
Not New/Modified	Yes	48E4301	48E4301	Shelter J-4301	VOC	0.26	1.09	0	0	Process Vent
Not New/Modified	Yes	48E4303	48E4303	Shelter J-4303	VOC	0.11	0.48	0	0	Process Vent
Not New/Modified	Yes	OP2PV48055	OP2PV48055	Analyzer Vent	VOC	0.08	0.35	0	0	Process Vent
Not New/Modified	Yes	48E4501A	48E4501A	Olefins (OP-2) Analyzer	VOC	0.01	0.01	0	0	Process Vent
Not New/Modified	Yes	48E11	48E11	Cooling Tower	VOC	12.1	22.71	0	0	Cooling Tower
Not New/Modified	Yes				PM	7.88	34.53	0	0	
Not New/Modified	Yes				PM10	3.94	17.27	0	0	
Not New/Modified	Yes				PM2.5	0.02	0.07	0	0	
Not New/Modified	Yes	44PVD4420	44PVD4420	Dilution Generator Vent	VOC	1.97	1.66	0	0	Process Vent
Not New/Modified	Yes				Acetone	0.03	0.03	0	0	
Not New/Modified	Yes	48HTF4804A/B	48HTF4804A/B	Superheater Vents	VOC	4.04	0.01	0	0	Process Vent
Not New/Modified	Yes	OP2EN1	OP2EN1	Diesel Engine-Driven Air Compressor	NOx	1.73	3.88	0	0	Engine: Internal Combustion Engine, Spark Ignited
Not New/Modified	Yes				CO	3.02	6.8	0	0	
Not New/Modified	Yes				SO2	<0.01	0.01	0	0	
Not New/Modified	Yes				PM	0.02	0.04	0	0	
Not New/Modified	Yes				VOC	0.16	0.37	0	0	
Not New/Modified	Yes				PM10	0.02	0.04	0	0	
Not New/Modified	Yes				PM2.5	0.02	0.04	0	0	
Not New/Modified	Yes	43TK4301	43E01	D-4311 NCTBP Tank	VOC	22.19	0.47	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	43TK4303	43E03	D-4310 EADC Tank	VOC	33.19	0.41	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	45TK4511	45E11	Antifoulant Storage Tank No. 4511	VOC	0.55	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	46TK4607	46E07	Antifoulant Storage Tank No. 4607	VOC	0.28	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	48TK48302	48E07	Pyrolysis Gas Oil Storage Tank No. 48302	VOC	7.75	2.47	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes				Benzene	0.05	0.02	0	0	
Not New/Modified	Yes	48TK48303	48E08	Slop Oil Storage Tank No. 48303	VOC	0.69	2.27	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.62	0.16	0	0	
Not New/Modified	Yes	48TK48007	48E22	Pyrolysis Fuel Oil	VOC	12.62	14.53	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes				Benzene	0.13	0.17	0	0	
Not New/Modified	Yes	48TK48304	48E20	Pyrolysis Fuel Oil Storage Tank No. 48304	VOC	18.61	7.54	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes				Benzene	0.16	0.06	0	0	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
Not New/Modified	Yes	48TK48305	48E21	Storage Tank No. 48305	VOC	18.61	7.48	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes				Benzene	0.16	0.11	0	0	
Not New/Modified	Yes	49TK4901	49E01	Storage Tank No. 4901	VOC	8.38		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	1.13		0	0	
Not New/Modified	Yes				H2S	<0.01		0	0	
Not New/Modified	Yes	49TK4902	49E02	Storage Tank No. 4902	VOC	8.38		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.27		0	0	
Not New/Modified	Yes				H2S	<0.01		0	0	
Not New/Modified	Yes	49TK4903	49E03	Storage Tank No. 4903	VOC	8.38		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	2.56		0	0	
Not New/Modified	Yes				H2S	<0.01		0	0	
Not New/Modified	Yes	49E01 to 49E03	49E01 to 49E03	Storage Tanks (3 total)	VOC		36.21	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene		1.64	0	0	
Not New/Modified	Yes				H2S		0.02	0	0	
Not New/Modified	Yes	49TK4904	49E04	Storage Tank No. 4904	VOC	6.03		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	3.71		0	0	
Not New/Modified	Yes				H2S	<0.01		0	0	
Not New/Modified	Yes	49TK4905	49E05	Storage Tank No. 4905	VOC	6.03		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	3.71		0	0	
Not New/Modified	Yes				H2S	<0.01		0	0	
Not New/Modified	Yes	49TK4906	49E06	Storage Tank No. 4906	VOC	5.81		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	3.31		0	0	
Not New/Modified	Yes				H2S	<0.01		0	0	
Not New/Modified	Yes	49TK4907	49E07	Storage Tank No. 4907	VOC	5.12		0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	3.39		0	0	
Not New/Modified	Yes				H2S	<0.01		0	0	
Not New/Modified	Yes	40E04 to 49E07	40E04 to 49E07	Storage Tanks (4 total)	VOC		37.72	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene		9.38	0	0	
Not New/Modified	Yes				H2S		0.03	0	0	
Not New/Modified	Yes	49TK4915	49E08	Pyrolysis Gas Oil Storage Tank No. 4915	VOC	0.32	0.33	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	<0.01	<0.01	0	0	
Not New/Modified	Yes	49TK4917	49E10	Storage Tank No. 4917	VOC	1.84	4.03	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.23	0.47	0	0	
Not New/Modified	Yes	49TK4919	49E11	Light Pyrolysis Gasoline Storage Tank No. 4919	VOC	1.28	2.69	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.41	0.89	0	0	
Not New/Modified	Yes	49TK4921	49E12	Storage Tank No. 4921	VOC	2.67	2.36	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.73	0.62	0	0	
Not New/Modified	Yes	49TK4922	49E13	Storage Tank No. 4922	VOC	3.21	7.14	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	2.29	5.02	0	0	
Not New/Modified	Yes	46TK461005	OP2SMLTK08	Antifoulant Storage Tank 78482	VOC	0.77	0.05	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	48TK48008	48E008	Slop Oil Storage Tank 48008	VOC	0.39	1.7	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes				Benzene	0.04	0.02	0	0	
Not New/Modified	Yes	48TK48009	48E009	Wastewater Tank 48009	VOC	1.03	1.84	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes				Benzene	0.05	1.23	0	0	
Not New/Modified	Yes	48TK48010	48E010	Wastewater Tank 48010	VOC	1.46	4.18	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.05	0.22	0	0	
Not New/Modified	Yes	48TK48011	48E011	Wastewater Tank 48011	VOC	2.8	7.54	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.1	0.4	0	0	
Not New/Modified	Yes	44TK4451	44E13	Water Rerun Tank 4451	VOC	0.01	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	44TK4455	44E12	Waste Caustic Tank 4455	VOC	0.43	1.62	0	0	Storage Tank (4): Floating roof with TVP <11.0 psia
Not New/Modified	Yes				Benzene	0.07	0.27	0	0	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
Not New/Modified	Yes	OP2SMLTK12	OP2SMLTK12	Neutralizing Amine Tank 971971	VOC	2.15	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	OP2SMLTK05	OP2SMLTK05	Corrosion Inhibitor Tank 983323	H3PO4	2.15	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	46TK461014	OP2SMLTK06	AntiFoam Tote (OP2 Cooling Tower)	VOC	2.15	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	ENMSSROUT	ENMSSROUT	MSS Vessel	VOC	4.37	0.05	0	0	MSS Activities
Not New/Modified	Yes	OP2ANALY	EOP2ANALY	Analyzers	VOC	0.03	0.13	0	0	Process Vent
Not New/Modified	Yes	49TK4916	49E09	Storage Tank No. 4916	VOC	1.5	4.03	0	0	Process Vent
Not New/Modified	Yes				Benzene	0.77	2.39	0	0	
Not New/Modified	Yes	EFUGNH3	FUGNH3	OP2 NH3 Fugitives	NH3	0.05	0.24	0	0	Fugitives: Piping and Equipment Leak
Not New/Modified	Yes	44STMFUG	44STMFUG	Dilution Steam Vent	VOC	0.49	1.61	0	0	Process Vent
Not New/Modified	Yes				Acetone	0.01	0.02	0	0	
Not New/Modified	Yes	OP2SMLTK50	OP2SMLTK50	VOC	VOC	0.45	<0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
Not New/Modified	Yes	OP2SMLTK33	OP2SMLTK33	Antifoulant Storage Tank	VOC	0.27	0.01	0	0	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
F44E00	No	15	295000	3301400						750	900	90
44FGWATER	No	15										
EOP2FUGEXP	No	15	295078	3301497	15					100	75	
44E08	No	15	295107	3301622		90	1.5	131	900			
EOP2DECOKE2	No	15	295110	3301604	90		1.5	131	900			
44E10	No	15	395051	3301415	NA	90	1.2	305.1	700			
44HTHTRS	No	15										
F4401 / F4402	No	15	295095	3301559								
F4403 / F4404	No	15	295095	3301581								
F4405 / F4406	No	15	295095	3301604								
F4407 / F4408	No	15	295095	3301626								
F4409 / F4410	No	15	295095	3301649								
F4411 / F4412	No	15	295095	3301672								
F4413 / F4414	No	15	295096	3301694								
F4418	No	15	295094	3301535								
F4415	No	15	295097	3301713								
F48001 A/B	No	15	294978	3301525								
EF4419	No	15	295079	3301518	194		8.5	45	340			
46E05	No	15	295110	3301539	NA	85	3.5	38.9	1700			
43E04	No	15	294843	3301383	NA	100	3.33	7.9	300			
43E06	No	15	294843	3301395	NA	97	3.33	15.1	720			
43E11	No	15	294843	3301377	NA	97	3.33	15.1	720			
43E07	No	15	294843	3301389	NA	82	3	1.4	300			
48E01	Yes											
43E05	No	15	294832	3301417	NA	48	0.5	225	1000			
45E02	No	15	294832	3301441	NA	48	0.5	225	1000			
45E07	No	15										
48E4602	Yes											
48E4603	No	15	294773	3301346								
48E4604	No	15	295085	3301381								
48E4605	No	15	295085	3301427								
48E4606	No	15	295085	3301450								
48E4607	No	15	295085	3301469								
OP2VJ48013	No	15	295085	3301358								
48E4301	No	15										
48E4303	No	15										
OP2PV48055	No	15	295085	3301404								
48E4501A	No	15										
48E11	No	15	295085	3301485								
44PVD4420	No	15										
48HTF4804A/B	No	15	294873	3301400								
OP2EN1	No	15	294873	3301438								
43E01	No	15	294896	3301519								
43E03	No	15	294969	3301492								

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
45E11	No	15	294969	3301494								
46E07	No	15	294985	3301523								
48E07	No	15										
48E08	No	15										
48E22	No	15	294796	3301406								
48E20	No	15										
48E21	No	15										
49E01	No	15										
49E02	No	15	294722	3301507	NA	50				700	65	
49E03	No	15					3	35.33333	338			
49E01 to 49E03	No	15			213		10	30	425			
49E04	No	15				7.8	4.5	391.6	865			
49E05	No	15	294828	3301535	NA	15	3	0.0033	80			
49E06	No	15	294828	3301537	NA	15	3	0.0033	80			
49E07	No	15	295013	3301491	NA	10.5	3	<0.1	80			
40E04 to 49E07	No	15	294868	3301632	NA	7.3	3	<0.1	80			
49E08	No	15	294932	3301494	NA	10.5	3	<0.1	80			
49E10	No	15	294844	3301290	NA	15	3	<0.1	70			
49E11	No	15	295053	3301542	NA	24	3	<0.1	232			
49E12	No	15	295053	3301530	NA	24	3	0.0033	170			
49E13	No	15	295053	3301517	NA	30	3	0.0033	170			
OP2SMLTK08	No	15	294770	3301444	NA	48	3	0.0033	175			
48E009	No	15	294820	3301452	NA	48	3	0.0033	175			
48E010	No	15	294870	3301454	NA	48	3	0.0033	140			
44E13	No	15	294984	3301265	NA	40	3	<0.1	70			
44E12	No	15	294804	3301266	NA	40	3	0.003	170			
OP2SMLTK12	No	15	294864	3301266	NA	40	3	<0.1	70			
OP2SMLTK05												
OP2SMLTK06	No	15	295037	3301257	NA	48	3	<0.1	70			
ENMSSROUT	No	15	295079	3301257	NA	48	3	<0.1	70			
EOP2ANALY	No	15	294748	3301281	NA	48	3	<0.1	75			
49E09	No	15	294747	3301241	NA	48	3	<0.1	75			
FUGNH3												
44STMFUG	No	15	294592	3301134	NA	48	3	0.0033	180			
OP2SMLTK50	No	15	294644	3301175	NA	48	3	<0.1	70			
OP2SMLTK33	No	15	294644	3301132	NA	48	3	<0.1	70			

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

I. Public Notice Applicability	
A. Application Type	
Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes
Is this an application for a minor permit amendment?	Yes
Is there any change in character of emissions in this application (a new criteria pollutant or a new VOC or PM species)?	No
Is there a new air contaminant in this application?	No

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

For public notice applicability, the agency does not include consolidation or incorporation of any previously authorized facility or activity (PBR, standard permits, etc.), changes to permitted allowable emission rates when exclusively due to changes to standardized emission factors, or reductions in emissions which are not enforceable through the amended permit. Thus, the total emissions increase would be the sum of emissions increases under the amended permit and the emissions decreases under the amended permit for each air contaminant.

The table below will generate emission increases based on the values represented on the "Unit Types - Emission Rates" sheet. Use the "yes" and "no" options in column B of the "Unit Types - Emission Rates" worksheet to indicate if a unit's proposed change of emissions should be included in these totals.

Notes:

1. Emissions of PM, PM10, and/or PM2.5 may have been previously quantified and authorized as PM, PM10,and/or PM2.5. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards and public notice requirements may change during the permit review.

2. All renewals require public notice.

This row is optional. If you do not think the table below accurately represents public notice applicability increases for your project, provide discussion here (1000 characters).	
Do the facilities handle, load, unload, dry, manufacture, or process grain, seed, legumes, or vegetable fibers (agricultural facilities)?	No

Pollutant	Current Long-Term (tpy)	Consolidated Emissions (tpy)	Proposed Long-Term (tpy)	Project Change in Allowable (tpy)	PN Threshold	Notice required?
VOC	740.46	0.00	742.62	2.16	5	No
PM	213.58	0.00	213.58	0.00	5	No
PM_{10}	196.32	0.00	196.32	0.00	5	No
$PM_{2.5}$	179.12	0.00	179.12	0.00	5	No
NO_x	2090.67	0.00	2096.40	5.73	5	Yes
CO	2060.50	0.00	2089.99	29.49	50	No
SO_2	147.55	0.00	150.36	2.81	10	No
Pb	0.00	0.00	0.00	0.00	0.6	No
NH3	12.02	0	12.02	0	5	No
Acetone	0.05	0	0.05	0	5	No
Benzene	23.08	0	23.08	0	5	No
H2S	0.05	0	0.05	0	5	No
H3PO4	0.01	0	0.01	0	5	No

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

C. Is public notice required for this project as represented in this workbook? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
D. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	No

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting

Company Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Mrs.
First Name:	Teresa
Last Name:	Peneguy
Title:	Environmental Permitting
Company Name:	LyondellBasell
Mailing Address:	PO Box 777
Address Line 2:	
City:	Channelview
State:	Texas
ZIP Code:	77530
Telephone Number:	281-452-8330
Fax Number:	
Email Address:	teresa.peneguy@lyb.com

B. Public place

Place a copy of the full application (including all of this workbook and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	North Channel Branch Library
Physical Address:	15741 Wallisville Road
Address Line 2:	
City:	Houston
ZIP Code:	77049
County:	Harris
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program?	Spanish

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Not applicable

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at:

https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Lina Hidalgo
Mailing Address:	1001 Preston, Suite 911
Address Line 2:	
City:	Houston
State:	Texas
ZIP Code:	77002

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Adrian
Last Name:	Garcia
Title:	County Commissioner
Mailing Address:	4500 E Sam Houston Pkwy S
Address Line 2:	
City:	Pasadena
State:	Texas
ZIP Code:	77505
Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Harris
This project will be located in an area that is in attainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	Ozone - Serious
Determination:	**This project will be located in a county with a Serious Ozone nonattainment classification, and the project will be reviewed under a Serious Ozone nonattainment classification. Complete the nonattainment section below and provide an analysis with the application.**

II. PSD and GHG PSD Applicability Summary			
Is netting required for the PSD analysis for this project?			**No**
Pollutant	**Project Increase**	**Threshold**	**PSD Review Required?**
CO	29.49	100	No
NO_x	5.73	40	No
PM	0	25	No
PM_{10}	0	15	No
$PM_{2.5}$	0	10	No
SO_2	2.81	40	No
Pb			
H_2S			
TRS			
Reduced sulfur compounds (including H_2S)			
H_2SO_4			
Fluoride (excluding HF)			
CO2e			

III. Nonattainment Applicability Summary			
Is netting required for the nonattainment analysis for this project?			**Yes**
If yes, the project increases listed below should be after netting has been performed. Attach the netting information to the application.			
Pollutant	**Project Increase (after netting)**	**Threshold**	**NA Review Required?**

Ozone (as VOC)	2.16	40	No
Ozone (as NO_x)	5.73	5	Yes

IV. Offset Summary (for Nonattainment Permits)			
Pollutant	**Offset Ratio**	**Offset Quantity Required (tpy)**	**Where is the offset coming from?**
Ozone (as NO_x)	1.20 : 1	6.876	Purchase

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

I. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option. Then skip sections II and III.	No
Select Application Type	Major Application

II. Direct Costs - Non-Renewal	
Type of Cost	**Amount**
Process and control equipment not previously owned by the applicant and not currently authorized under this chapter.	$0.00
Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements.	$0.00
Freight charges.	$0.00
Site preparation, including demolition, construction of fences, outdoor lighting, road, and parking areas.	$0.00
Installation, including foundations, erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration, and process control equipment.	$0.00
Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures.	$0.00
Ambient air monitoring network.	$0.00
Sub-Total:	$0.00

III. Indirect Costs - Non-Renewal	
Type of Cost	**Amount**
Final engineering design and supervision, and administrative overhead.	$0.00
Construction expense, including construction liaison, securing local building permits, insurance, temporary construction facilities, and construction clean-up.	$0.00
Contractor's fee and overhead.	$0.00
Sub-Total:	$0.00

IV. Calculations - Non-Renewal
For GHG permits: A single PSD fee (calculated on the capital cost of the project per 30 TAC § 116.163) will be required for all of the associated permitting actions for a GHG PSD project. Other NSR permit fees related to the project that have already been remitted to the TCEQ can be subtracted when determining the appropriate fee to submit with the GHG PSD application. Identify these other fees in the GHG PSD permit application.

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Estimated Capital Cost		Major Application Fee
Less than $300,000		$3,000 (minimum fee)
$300,000 - $7,500,000		1.0% of capital cost
$300,000 - $25,000,000		N/A
Greater than $7,500,000		$75,000 (maximum fee)
Greater than $25,000,000		N/A

Your estimated capital cost:	**$0.00**	Minimum fee applies.
Permit Application Fee:		**$3,000.00**

VI. Total Fees

Note: fees can be paid together with one payment or as two separate payments.

Non-Renewal Fee	$3,000.00
Total	$3,000.00

VII. Payment Information

A. Payment One (required)

Was the fee paid online?	No
Enter the fee amount:	$ 3,000.00
Enter the check, money order, ePay Voucher, or other transaction number:	WRS0019807
Enter the Company name as it appears on the check:	Equistar Chemicals LP

C. Total Paid	**$3,000.00**

VIII. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Impacts

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
Ozone	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
VOC	No	MERA analysis, steps 0-2 only or using screening tables	Attach a detailed description of which MERA step was met for each species in the project. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
CO	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
PM	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
PM10	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
PM2.5	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
SO2	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NOx	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
NH3	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Acetone	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
Benzene	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
H2S	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.	
H3PO4				

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Plant Type	Current Tier I BACT	Confirm	Additional Notes
Plant fuel gas facility	Maximum short term H2S emissions: 0.1 gr/dscf or 160 ppmv. Maximum annual H2S	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	48FL4801P/F	Control: Flare	NOx	Provide emission factor used and reference.	Yes	Use TCEQ factor of 0.068 lb/MMBtu for low Btu, steam-assisted flare
			CO	Provide emission factor used and reference.	Yes	Use TCEQ factor of 0.3503 lb/MMBtu for high Btu, steam-assisted flare
			SO2	Provide emission factor used and reference.	Yes	Natural gas has less than 5 grains/100 dscf
			VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	Meets 98% control efficiency and 99% for compounds up to 3 carbons
			MSS	Same as normal operation BACT requirements.		No changes to MSS

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Monitoring

This sheet provides the minimum acceptable requirements to demonstrate compliance through monitoring for each pollutant proposed to be emitted from each FIN. This sheet also includes measuring techniques for sources of significant emissions in the project.

Instructions:
1. The unit types listed under Unit Type (column B) include all new, modified, consolidated, and/or renewed sources as indicated on the "Unit Types - Emission Rates" sheet. Each new, modified, consolidated, and/or renewed source must address how compliance will be demonstrated.
2. The pollutants listed in Pollutant (column C) include the pollutants indicated on the "Unit Types - Emission Rates" sheet.

Monitoring (30 TAC § 116.111(a)(2)(G))
3. The minimum acceptable monitoring is automatically populated for each unit type and pollutant.
   - Additional monitoring may be required, particularly for Title V sources, and will be included in the NSR and/or Title V permits.
4. Fully expand the Minimum Monitoring Requirements (column D) by increasing the row heights so all text is visible. (Place the cursor on the bottom of the number line to the far left of the screen, click and drag downward until all text is visible.)
5. Review the monitoring and confirm that you will meet all representations listed on the sheet and any additional attachments by entering or selecting "Yes" in Confirm (column E).
6. Add additional notes as necessary in Additional Notes for Monitoring (column F), limited to 500 characters or fewer. Examples include the following:
   - Proposed monitoring for pollutants or units that list "See additional notes:";
   - Details requested in the populated data;
   - Alternative monitoring you are proposing; and
   - Any additional information relevant to the minimization of emissions.
7. Cap EPNs do not need monitoring (leave those rows blank).

Measurement of Emissions (30 TAC § 116.111(a)(2)(B))
Note: this section will be greyed out if this project does not require PSD or nonattainment review, as represented on the General sheet.
7. For each pollutant with a project increase **greater** than the PSD significant emission rate, select the proposed measurement technique using the dropdown (column G).
8. For each pollutant with a project increase **less** than the PSD significant emission rate: leave blank.
9. If selecting "other", provide details in Additional Notes for Measuring (column H).
10. You may also use the Additional Notes for Measuring (column H) to provide more details on a selection.

Click here to return to Cover Sheet.

Important Note: The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours. All required records must be maintained in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application. The site must make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner. The applicant must comply with any additional recordkeeping requirements specified in special conditions in the permit. All records must be retained in the file for at least two years following the date that the information or data is obtained. Some permits are required to maintain records for five years. [30 TAC § 116.115(b)(2)(E)]

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
48FL4801P/F	Control: Flare	NOx	Pilot flame presence monitored continuously. Waste gas flow and	Yes	Monitor vent flow and analyze vent stream		
		CO	Pilot flame presence monitored continuously. Waste gas flow and	Yes	Monitor vent flow and analyze vent stream		
		SO2	Pilot flame presence monitored continuously. Waste gas flow and	Yes	Monitor vent flow and analyze vent stream		
		VOC	Pilot flame presence monitored continuously. Waste gas flow and	Yes	Monitor vent flow and analyze vent stream		

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: _10/01/2019_
Permit #: ___2933_____
Company: _Equistar___

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	Email	11/19/2019
Hard copy of the General sheet with original (ink) signature	Mail	11/19/2019
Professional Engineer Seal	Not applicable	
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form		
Area map	Mail	11/19/2019
Plot plan	Mail	11/19/2019
Process description	Mail	11/19/2019
Process flow diagram	Mail	11/19/2019
List of MSS activities		
State regulatory requirements discussion	Mail	11/19/2019
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	Mail	11/19/2019
Netting analysis (if required) - Tables 3F and 4F as needed	Not applicable	
D. Technical Information		
BACT discussion, if additional details are attached	Email	11/19/2019
Monitoring information, if additional details are attached	Email	11/19/2019
Material Balance (if applicable)	Not applicable	
Calculations	Email	11/19/2019
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	Email	11/19/2019
Electronic Modeling Evaluation Workbook: SCREEN3	Email	11/19/2019
Electronic Modeling Evaluation Workbook: NonSCREEN3	Not applicable	
PSD modeling protocol		
F. Additional Attachments		
Expedited Permit Feed	Mail	11/19/2019

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

EMEW Version No.: Version 2.2

Purpose Statement:
This workbook is completed by the applicant and submitted to the Texas Commission on Environmental Quality (TCEQ), specifically, the Air Dispersion Modeling Team (ADMT) for review. This workbook is a tool available for all projects using SCREEN3 for an impacts review and its use is required starting June 1, 2019. Provide the workbook with the permit application submittal for any Minor New Source Review project requiring a modeling impacts demonstration.

This workbook follows the guidance outlined in the Air Quality Modeling Guidelines (APDG 6232, September 2018) which can be found here:

https://www.tceq.texas.gov/assets/public/permitting/air/Modeling/guidance/airquality-mod-guidelines6232.pdf

Workbook Instructions:
1. Save a copy of the workbook to your computer or desktop prior to entering data.
2. Complete all required sections leaving no blanks. You may use the "tab" button or the arrow keys to move to the next available cell. Use "enter" to move down a line. Note: drop-downs are case-sensitive.
3. Fill in the workbook in order, do not skip around as this will cause errors. Use caution if changing a previously entered entry.
4. Not applicable sections of this workbook will be hidden as data is entered. For example, answering "No" to "Is downwash applicable? " will hide these sections of the workbook required only for downwash entry.
5. Email the workbook electronic file (EMEW) and any attachments to the Air Permits Initial Review Team. The subject line should read "Company Name - Permit Number (if known) - NSR Permit Application". Email address:

apirt@tceq.texas.gov

6. If printing the EMEW, follow the directions below to create a workbook header.
7. Printing the EMEW is not required for submitting to the Air Permits Division (APD); however, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required. To print the workbook, follow the instructions below. Please be aware, several sheets contain large amounts of data and caution should be taken if printing, such as the Speciated Emissions sheet.
8. Updates may be necessary throughout the review process. Updated workbooks must be submitted in electronic format to APD. For submittal to regional offices, local programs, or public places you only have to print sheets that had updates. Be sure to change the headers accordingly.

Note: Since this will be part of the permit application, follow the instructions in the Form PI-1 General Application on where to send copies of your EMEW and permit application. The NSR Application Workbook can be found :
https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/nsrapp-tools.html

Create Headers Before Printing:
1. Right-click one of the workbook's sheet tabs and "Select All Sheets."
2. Enter the "Page Layout View" by using the navigation ribbon's View > Workbook Views > Page Layout, or by clicking the page layout icon in the lower-right corner of Excel.
3. Add the date, company name, and permit number (if known) to the upper-right header. Note that this may take up to a minute to update your spreadsheet. Select any tab to continue working on the spreadsheet.

Printing Tips:
While APD does not need a hard copy of the full workbook, you may need to print it for sending to the regional offices, local programs, and for public access if notice is required.
1. The default printing setup for each sheet in the workbook is set for the TCEQ preferred format. The print areas are set up to not include the instructions on each sheet.
2. You have access to change all printing settings to fit your needs and printed font size. Some common options include:
   -Change what area you are printing (whole active sheet or a selection);
   -Change the orientation (portrait or landscape);
   -Change the margin size; and
   -Change the scaling (all columns on one sheet, full size, your own custom selection, etc.).

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Acknowledgement:	Select from the drop down:
I acknowledge that I am submitting an authorized TCEQ Electronic Modeling Evaluation Workbook and any necessary attachments. Except for inputting the requested data, I have not changed the TCEQ Electronic Modeling Evaluation Workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	Choose an item

Administrative Information:	
Data Type:	**Facility Information:**
Project Number (6 Digits):	
Permit Number:	2933
Regulated Entity ID (9 Digits):	100542281
Facility Name:	Equistar Channelview
Facility Address:	8280 Sheldon Road
Facility County (select one):	Harris
Company Name:	Equistar Chemicals, LP
Company Contact Name:	Teresa Peneguy
Company Contact Number:	281-452-8330
Company Contact Email:	teresa.peneguy@lyb.com
Modeling Contact Name:	Teresa Peneguy
Modeling Company Name, as applicable:	LyondellBasell
Modeling Contact Number:	281-452-8330
Modeling Contact Email:	teresa.peneguy@lyb.com
New/Existing Site (select one):	Existing Site
Modeling Date (MM/DD/YYYY):	10/9/2019
UTM Zone (select one):	15

Sheet Instructions: Indicate in the Table of Contents which sections are applicable and included for this modeling demonstration. Select "X" from the drop down if the item below is included in the workbook. Note: This workbook is only for SCREEN3 analyses. Please use the separate Electronic Modeling Evaluation Workbook (EMEW) for the following air dispersion models: AERSCREEN, ISC/ISCPrime, and/or AERMOD.

Table of Contents

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Included Attachments Instructions: The following are attachments that must be included with any modeling analysis. If providing the plot plan and area map with the permit application, ensure there is also a copy with the EMEW. The copy can be electronic.	**Select an X from the dropdown menu if included:**
Plot Plan:	
Instructions: Mark all that apply in the attached plot plan. For larger properties or dense source areas, provide multiple zoomed in plot plans that are legible.	
Property/Fence Lines all visible and marked.	X
North arrow included.	X
Clearly marked scale.	X
All sources and buildings are clearly labeled.	X
Area Map:	
Instructions: Mark all that apply in the attached area map.	
Annotate schools within 3,000ft of source's nearest property line.	X
All property lines are included.	X
Non-industrial receptors are identified.	X
Additional Attachments (as applicable): *Note: These are just a few examples of attachments that may need to be included. There may be others depending on the scope of the modeling analysis.*	**Select an X from the dropdown menu if included:**
Single Property Line Designation	
Include Agreement, Order, and map defining each petitioner.	X
Post Processing using Unit Impact Multipliers (UIMs)	
Include documentation on any calculations used with the UIMs (i.e., Step 3 of the MERA).	
Modeling Techniques	
Provide documentation on modeling techniques indicated in the workbook.	
Other Attachments *Provide a list in the box below of additional attachments being provided that are not listed above:*	
	Choose an item

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

I. Project Information
A. Project Overview: In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*
Natural gas is being added to flare to meet furture regulatory flame zone heat value requirements for flares.

II. Air Dispersion Modeling Preliminary Information			
Instructions: Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around. For larger text boxes, double click to type or insert text.			
A. Building Downwash			
No	Is downwash applicable? *(Select "Yes" or "No")*		
B. Type of Analyses: (Select "X" in all that apply)			
X	Minor NSR NAAQS	X	State Property Line
X	Health Effects		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

C. Constituents Evaluating: (Select "X" in all that apply)			
NAAQS: List all pollutants that require an modeling review. *(Select "X" in all that apply)*			
X	SO_2		PM_{10}
X	CO		$PM_{2.5}$
	Pb	X	NO_2
Both			Identify which averaging periods are being evaluated for NO_2.
Tier 2: 0.9			Identify the 1-hr NO_2 tier used for SCREEN3.
Tier 2: 0.9			Identify the annual NO_2 tier used for SCREEN3.
State Property Line: List all pollutants that require an modeling review. *(Select "X" in all that apply)*			
	H_2S	X	SO_2
	H_2SO_4		
Health Effects: Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.			
D. Dispersion Options: *Select "X" in the box to select an option. Note: if selecting both options, be sure to explain the reasoning for this in the box below.*			
X	Urban		
	Rural		
Provide justification on the dispersion option selected above in the following box:			
Located in municipality of Channelview Texas			

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

E. Meteorological Data:	
Select Meteorological Dataset Modeled:	Full Meteorological Data

F. Receptor Grid:
Describe the receptor grid being modeled in the following text box:
10 m - 25000 m array; at ground level

G. Terrain:	
Select the terrain option being modeled:	Flat
For justification on terrain selection, fill in the box below:	
Land is costal and flat	

H. Modeling Techniques: *Briefly describe any modeling techniques used for the SCREEN3 analyses. Provide additional attachments, if needed, to support the analyses.*
Modeled emissions equivalent to 1 lb/hr increase; emissions from flares sufficient height to not be impacted by downwash structures.

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Flare Source Parameters

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Height [m]	Heat Release (cal/s)	Description
48E01	48E01	Routine	295309.68	3301313.00	167.64	8112194.00	OP2 Flare

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Point + Flare Emissions

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use
48E01	48E01	Routine	Generic	1-hr			No	1.00	Generic Modeling at 1lb/hr	No	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Point + Flare Emissions

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Facility:

EPN	Model ID	Downwash Structure Considered	Distance to Ambient Air (m)
48E01	48E01		203.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Speciated Emissions

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Speciated Emissions by Model ID

CAS #	Chemical Species	Other Species	Short-Term ESL (µg/m³)	Long-Term ESL (µg/m³)
74-98-6	propane		Simple Asphyxiant	Simple Asphyxiant

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Combined Emissions

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

EPN	Model ID	Modeling scenario	Pollutant	Modeled Averaging time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]	Downwash Structure Considered
48E01	48E01	Routine	Generic	1-hr	NAAQS	SIL Analysis	No	Flare	1.00	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Table 1. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	0.63000	14.3
H_2SO_4	1-hr		1
H_2SO_4	24-hr		0.3
H_2S	1-hr		2.16 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		3.24 *(If property is not residential, recreational, business, or commercial)*

Table 2. Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr	3.44000	715
H_2SO_4	1-hr		50
H_2SO_4	24-hr		15
H_2S	1-hr		108 *(If property is residential, recreational, business, or commercial)*
H_2S	1-hr		162 *(If property is not residential, recreational, business, or commercial)*

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Table 3. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	3.44000	7.8*
SO_2	3-hr	3.10000	25
SO_2	24-hr	1.38000	5
SO_2	Annual	0.28000	1
PM_{10}	24-hr		5
NO_2	1-hr	2.78000	7.5**
NO_2	Annual	0.22000	1
CO	1-hr	15.91000	2000
CO	8-hr	11.13000	500

Additional information for the De Minimis values listed above can be found at:
* www.tceq.texas.gov/assets/public/permitting/air/memos/appwso2.pdf
** www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Table 4. $PM_{2.5}$ Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Total Conc. = Secondary $PM_{2.5}$ + GLCmax (µg/m^3)	De Minimis (µg/m^3)
$PM_{2.5}$	24-hr		0	0.00000	1.2*
$PM_{2.5}$	Annual		0	0.00000	0.2*

Additional information for the De Minimis values listed above can be found at:
* www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Table 5. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + GLCmax] (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr		0	0	196
SO_2	3-hr		0	0	1300
SO_2	24-hr		0	0	365
SO_2	Annual		0	0	80
PM_{10}	24-hr		0	0	150
Pb	3-mo		0	0	0.15
NO_2	1-hr		0	0	188
NO_2	Annual		0	0	100
CO	1-hr		0	0	40000
CO	8-hr		0	0	10000

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Table 6. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + Secondary + GLCmax] (µg/m^3)	Standard (µg/m^3)
$PM_{2.5}$	24-hr		0	0	0	35
$PM_{2.5}$	Annual		0	0	0	12

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Unit Impact Multipliers

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

EPN11	11A	Norm	6.24	5.616	4.368	2.496	0.4992
PORTVCU	PORTVCU	Generic	0.032	0.0288	0.0224	0.0128	0.00256

Facility:

EPN	Model ID	Modeling Scenario	1-hr GLCmax ($\mu g/m^3$ per lb/hr)	3-hr GLCmax ($\mu g/m^3$ per lb/hr)	8-hr GLCmax ($\mu g/m^3$ per lb/hr)	24-hr GLCmax ($\mu g/m^3$ per lb/hr)	Annual GLCmax ($\mu g/m^3$ per lb/hr)
48E01	48E01	Routine	1.86E-01	0.16695	0.12985	0.0742	0.01484

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]
propane	74-98-6	1-hr	Simple Asphyxiant	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Modeling File Names

Date: _10/9/2019
Permit #: __2933
Company Name: __Equistar

Administrative Information:	
Data Type:	**Facility Information:**
Project Number:	
Permit Number:	2933
Regulated Entity ID:	100542281
Facility Name:	Equistar Channelview
Company Name:	Equistar Chemicals, LP
Company Contact Name:	Teresa Peneguy
Company Contact Number:	281-452-8330
County:	Harris

This sheet documents the modeling file names included in the modeling analysis.

Instructions:

1. Enter the file names of all submitted files for this modeling analysis.
2. Document the pollutants and/or averaging times included in the file.
3. Enter the file extensions associated with each file name. For example, one model run may create an input and output.
4. Give a brief description of what the file represents. For example, the type of analysis (project analysis, de minims analysis, site-wide analysis, full NAAQS analysis), or the type of receptor grid (industrial, non-industrial, industrial water, non-industrial water).

Notes:

1. Be sure to provide all files relied on in the modeling analyses.

Example:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
EPN_FUG_1hr_CO	CO	1-hr	*.out	de minimis
EPN_FUG_1hr_NO2	NO2	1-hr	*.out	de minimis
EPN_FUG_1hr_SO2	SO2	1-hr	*.out	de minimis
EPN_FUG_generic	generic	1-hr	*.out	project wide
EPN_POND_generic	generic	1-hr	*.out	project wide
EPN_POND_generic	generic	1-hr	*.out	project wide

Facility:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
OP2 HV	generic	1-hr	.s3i	flare

EPN	Model ID	GLCmax @ 1 lb/hr ug/m3	
48E01	48E01	0.1855	max occurs beyond property line

Emissions Increase

multiplier 0.08

EPN		48E01 Project Increase	**GLCmax**	ESL	< 10% ESL	48E01 Project Increase	GLCmax	**Cmax annu**	ESL	< 10% ESL
		lb/hr	**ug/m3**	ug/m3		tpy	ug/m3	**ug/m3**	ug/m3	
NOx		16.65	**3.089**			5.73	0.243	**0.0194**		
CO		85.75	**15.907**			29.49	1.249	**0.0999**		
SO2		18.55	**3.441**			2.81	0.119	**0.0095**		
propane	74-98-6	1.32	**0.245**	Simple Asphyxiant		2.16	0.091	**0.0073**	Simple Asphyxiant	

	1-hr		3-hr		8-hr		24-hr		Annual	
	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3	multiplier	ug/m3
NO2	0.9	2.78							0.08	0.22
CO	1	15.91			0.7	11.13				
SO2	1	3.44	0.9	3.10			0.4	1.38	0.08	0.28

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES[1]

Company:	Equistar Chemicals, LP & Lyondell Chemical Company
Permit Application Number:	Various
	Criteria Pollutant: NO_X

	Project Date[2]	Facility at Which Emission Change Occured[3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Baseline Emissions[4] (tons/year)	B Proposed Emissions[4] (tons/year)	C Difference (A-B)[5]	Creditable Increase or Decrease[6]
1	Jan-2015	F-1203	EF1203	2128	KLP Project - Regeneration Heater	N/A- New Emission	-	0.24	0.24	0.24
2	Jan-2015	F-1202	EF1202	2128	KLP Project - Thermal Oxidizer	N/A- New Emission	-	2.19	2.19	2.19
3	Jan-2015	17FI1701	17E01	2128	KLP Project - East Plant Flare	2001-2002	19.73	24.40	4.67	4.67
4	Mar-2015	FL-6104	EFL6104	20416	Polyols 60KT Expansion	2004-2005	-	0.04	0.04	0.04
5	Mar-2015	ENGUT1	ENGUT1	79542	Engine Replacement	2013-2014	0.07	1.89	1.82	1.82
6	Mar-2015	EUTEN1	EUTEN1	132729	Engine Replacement	2013-2014	0.02	1.89	1.87	1.87
7	Mar-2015	OP2EN1	OP2EN1	98647	Engine Replacement	2013-2014	1.69	4.25	2.56	2.56
8	Mar-2015	OP1EN1	OP1EN1	112230	Engine Replacement	2013-2014	3.06	4.25	1.19	1.19
									Page Subtotal[7]	14.58
									Project Emission	
Summary of Contemporaneous Changes									**Total**	**105.43**

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES[1]

Company:	Equistar Chemicals, LP & Lyondell Chemical Company
Permit Application Number:	Various
	Criteria Pollutant: NO_X

	Project Date[2]	Facility at Which Emission Change Occured[3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Baseline Emissions[4] (tons/year)	B Proposed Emissions[4] (tons/year)	C Difference (A-B)[5]	Creditable Increase or Decrease[6]
9	May-2015	FL68493	EFL68493	Standard Permit 131137	FLARE TIP REPLACEMENT	2005-2006	1.69	0.11	-1.58	-
10	May-2015	FL68491	FL68491	133250	FLARE TIP REPLACEMENT	2013-2014	0.03	0.04	0.01	0.01
11	Dec-2015	48E01	48E01	PBR 136396	Alky Propane Project	N/A- New Emission	-	0.01	0.01	0.01
12	Oct-2016	ZMSENAIS	ZMSENAIS	101590	Update Emission Factor	2010-2011	1.79	2.87	1.08	1.08
13	Mar-2017	17FL1701, 17FL1701F, 17FL1701P	17E01	143753	Alky vent to East Plant Flare	2014-2015	2.50	7.37	4.87	4.87
14	Jun-2017	OP2EN1	OP2EN1	147365	Engine Replacement	N/A- New Emission	-	3.88	3.88	3.88
15	Jan-2018	38FL3801F	38E01	150258	Analyzer to Flare project	N/A- New Emission	-	0.01	0.01	0.01
16	Jan-2018	48FL4801F	48E01	150257	Analyzer to Flare project	N/A- New Emission	-	0.01	0.01	0.01
									Page Subtotal [7]	9.87
									Project Emission	
Summary of Contemporaneous Changes									**Total**	**105.43**

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES[1]

Company:	Equistar Chemicals, LP & Lyondell Chemical Company
Permit Application Number:	Various
	Criteria Pollutant: NO_X

	Project Date[2]	Facility at Which Emission Change Occured[3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Baseline Emissions[4] (tons/year)	B Proposed Emissions[4] (tons/year)	C Difference (A-B)[5]	Creditable Increase or Decrease[6]
17	Jan-2018	17FL1701F	17E01	150031	Analyzer to Flare project	N/A- New Emission	-	0.02	0.02	0.02
18	Mar-2019	25FL2502F, 25FL2502P	25E02	22779	PolyBD Renewal & Amendment	2011-2012	4.50	6.37	1.87	1.87
19	May-2018	EFL6104	FL6104	151560	GBL/NMP Production Increase	N/A- New Emission	-	0.00	0.00	0.00
20	Aug-2018	48EFL4801F	48E01	152624	Flex Coalescors	N/A- New Emission	-	0.01	0.01	0.01
21	Nov-2018	25FL25E01	25E01	153580	IPOH change in Crude Acetone Feed Conc	N/A - Project Actual Increase	-	0.07	0.07	0.07
22	Dec-2018	48FL4801F	48E01	153835	Flex C3 Membrane	N/A - Project Actual Increase	-	0.00	0.00	0.00
23	Jan-2019	48FL4801F	48E01	154482	Y-grage feed	N/A - Project Actual Increase	-	0.00	0.00	0.00
24	Mar-2019	EUTEN1	EUTEN1	155453	Air Compressor	N/A- New Emission	-	0.41	0.41	0.41
									Page Subtotal[7]	2.40
									Project Emission	
Summary of Contemporaneous Changes									**Total**	**105.43**

TABLE 3F

PROJECT CONTEMPORANEOUS CHANGES[1]

Company:	Equistar Chemicals, LP & Lyondell Chemical Company	
Permit Application Number:	Various	Criteria Pollutant: NO_X

	Project Date[2]	Facility at Which Emission Change Occured[3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Baseline Emissions[4] (tons/year)	B Proposed Emissions[4] (tons/year)	C Difference (A-B)[5]	Creditable Increase or Decrease[6]
25	Jan-2019	MEOHFLARE/ MEOHFLR2	EMEOHFLARE/EMEOHFLR2	154481	Flare operated unassisted	11/2016-10/2018	1.8	7.97	6.18	6.18
26	Jan-2019	FL6104	EFL6104	154220	Polyols Production Increase	N/A - Project Actual Increase	-	0.00	0.00	0.00
27	Jan-2019	FL68491	EFL68491	154483	POSMII O2	N/A - Project Actual Increase	-	0.00	0.00	0.00
28	May-2020	37E03	37E03	156142	F-3701 Burner Mod	2011-2012	1.6	10.74	9.17	9.17
29	Sep-2019	EMEOHFLARE	EMEOHFLARE	8125	Renewal/Amend	N/A- New Emission	-	6.70	6.70	6.70
30	Mar-2019	PPTO	PPTO	156509	HTC	N/A- New Emission	-	0.12	0.12	0.12
31	May-2019	EUTENAIR1	EUTENAIR1	157139	Air Compressor & OP1 Engine	N/A- New Emission	-	1.73	1.73	1.73
32	May-2019	OP1EN1	OP1EN1	157139	Air Compressor & OP1 Engine	N/A- New Emission	-	3.88	3.88	3.88
									Page Subtotal[7]	27.79
									Project Emission	
Summary of Contemporaneous Changes									**Total**	**105.4**

TABLE 3F

PROJECT CONTEMPORANEOUS CHANGES[1]

Company:	Equistar Chemicals, LP & Lyondell Chemical Company	
Permit Application Number:	Various	Criteria Pollutant: NO_X

	Project Date[2]	Facility at Which Emission Change Occured[3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	A Baseline Emissions[4] (tons/year)	B Proposed Emissions[4] (tons/year)	C Difference (A-B)[5]	Creditable Increase or Decrease[6]
33	Jun-2019	17FL1701	17E01	157394	Move IPOH flare to East Plant	2014/2015	-	0.72	0.72	0.72
34	Jul-2019	17FL1701	17E01	157735	Alky Production Increase	N/A- New Emission	-	0.00	0.00	0.00
35	Nov-2019	OP2EN1	OP2EN1	159310	New OP2EN1	N/A- New Emission	-	3.88	3.88	3.88
36	Nov-2019	38E01	38E01	1768	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	19.37	19.37	19.37
37	Nov-2019	17E01	17E01	2128	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	9.11	9.11	9.11
38	Nov-2019	48E01	48E01	2933	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	5.73	5.73	5.73
39	Nov-2019	FL60731	EFL60731	4121	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	6.06	6.06	6.06
40	Nov-2019	EFL6105	EFL6105	18103	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	3.25	3.25	3.25

TABLE 3F
PROJECT CONTEMPORANEOUS CHANGES[1]

Company:	Equistar Chemicals, LP & Lyondell Chemical Company		
Permit Application Number:	Various	Criteria Pollutant: NO_X	

							A	B	C	
	Project Date[2]	Facility at Which Emission Change Occured[3] FIN	EPN	Permit No.	Project Name or Activity	Baseline Period	Baseline Emissions[4] (tons/year)	Proposed Emissions[4] (tons/year)	Difference (A-B)[5]	Creditable Increase or Decrease[6]
									Page Subtotal [7]	48.1
									Project Emission	
	Summary of Contemporaneous Changes								**Total**	**105.4**
41	Nov-2019	EFL6103	EFL6103	19155	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	1.81	1.81	1.81
42	Nov-2019	EFL6104	EFL6104	19155	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	0.76	0.76	0.76
43	Dec-2019	EFL68491	EFL68491	19613	Flare Nat Gas for 270 Flare HV compliance	N/A- New Emission	-	0.10	0.10	0.10
44	-	-	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-	-	-
46	-	-	-	-	-		-	-	-	-
47	-	-	-	-	-		-	-	-	-
48	-	-	-	-	-		-	-	-	-
									Page Subtotal [7]	2.7
									Project Emission	
	Summary of Contemporaneous Changes								**Total**	**105.4**

COMPREHENSIVE REPORT
Report Date:12/30/2019

Facility Information

RBLC ID:	TX-0864 (draft)	**Date Determination Last Updated:**	10/03/2019
Corporate/Company Name:	EQUISTAR CHEMICALS, LP	**Permit Number:**	N266, PSDTX1542, GHGPSDTX183
Facility Name:	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	**Permit Date:**	09/09/2019 (actual)
Facility Contact:	KIM FOLEY 281-862-5150	**FRS Number:**	110064622207
Facility Description:	new propane dehydrogenation (PDH) unit and a new polypropylene (PP) production unit: (1) The action concerns the authorization for the PDH unit is under TCEQ Project No. 286455 with assigned Permit Nos. 152181, PSDTX1540, GHGPSDTX182, and N264. (2) The action concerns the authorization for the PP unit is under TCEQ Project No. 286467 with assigned Permit Nos. 152184, PSDTX1542, GHGPSDTX183and N266. evaluated as a single project for purposes of evaluating major NSR. The project is subject to Nonattainment New Source Review (NNSR) requirements for significant increases of VOC (an ozone precursor) and is subject to Prevention of Significant Deterioration (PSD) requirements for CO and particulate (PM, PM10 and PM2.5). Affected units with no modifications include the wastewater treatment system (WWTS) and C3 Splitter project of the Olefin plants	**SIC Code:**	2869
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325199
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	HARRIS		
Facility State:	TX		
Facility ZIP Code:			
Permit Issued By:	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (Agency Name) MICHAEL PARTEE(Agency Contact) (512) 239-3312 michael.partee@tceq.texas.gov		
Other Agency Contact Info:	Ms. Xuan Zhao, (512) 239-1664, Xuan.Zhao@tceq.texas.gov		
Permit Notes:	Other listed FRSN 110006531397		

Affected Boundaries:	**Boundary Type:**	**Class 1 Area State:**	**Boundary:**	**Distance:**
	CLASS1	AR	Caney Creek	> 250 km

Process/Pollutant Information

PROCESS NAME: Process Vents

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements: NSPS , MACT , SIP

Control Method: (A) Elevated Flare, MPGF

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Multi Point Ground Flare

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: natural gas

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , MACT , SIP
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , SIP
Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , SIP
Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Elevated Flare

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: natural gas

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements: NSPS , MACT , SIP

Control Method: (P) good combustion practices, design, natural gas fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , MACT , SIP

Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Tetrachloride
CAS Number: 56-23-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Vis-broken Process Vents
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: MACT , SIP
Control Method: (A) thermal oxidizer
Est. % Efficiency: 99.990
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Thermal Oxidizer

Process Type: 19.200 (Emission Control Afterburners & Incinerators (combustion gasses only))

Primary Fuel: natural gas

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements:

Control Method: (P) good combustion practices, design, natural gas fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0200 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) SCR

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 50.0000 PPM 3% O2
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, design, natural gas fuel

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, design, natural gas fuel

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, design, natural gas fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fixed Roof Storage Tanks
Process Type: 42.005 (Petroleum Liquid Storage in Fixed Roof Tanks)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements:
Control Method: (P) painted white, submerged fill
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fugitive Components
Process Type: 50.007 (Petroleum Refining Equipment Leaks/Fugitive Emissions)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 500.0000 PPMV
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , SIP
Control Method: (P) 28LAER & 28PI
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 500.0000 PPMV
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , SIP
Control Method: (P) LDAR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Cooling Tower
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER
Other Applicable Requirements: SIP
Control Method: (P) nondirect
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 % DRIFT
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) drift eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0050 % DRIFT
Emission Limit 2: 6000.0000 PPMV TDS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 % DRIFT
Emission Limit 2: 6000.0000 PPMV TDS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: WASTEWATER SYSTEM
Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements: SIP

Control Method: (P) Process wastewater drains shall be equipped with water seals or equivalent. Quarterly visual or physical inspections on water seals.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: EMERGENCY DIESEL ENGINE

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Ultra-low sulfur diesel

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER
Other Applicable Requirements: SIP
Control Method: (P) Tier 4 exhaust emission standards specified at 40 CFR § 1039.101(b), 100 HR / YR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) Tier 4 exhaust emission standards specified at 40 CFR § 1039.101(b)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , SIP
Control Method: (P) Tier 4 exhaust emission standards specified at 40 CFR § 1039.101(b)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Tier 4 exhaust emission standards specified at 40 CFR § 1039.101(b)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Tier 4 exhaust emission standards specified at 40 CFR § 1039.101(b)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , SIP
Control Method: (P) Tier 4 exhaust emission standards specified at 40 CFR § 1039.101(b)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Tier 4 exhaust emission standards specified at 40 CFR § 1039.101(b)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: PRODUCT HANDLING
Process Type: 99.190 (Other Fugitive Dust Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: LIQUID PRODUCT LOADING
Process Type: 42.010 (Volatile Organic Liquid Marketing (except 42.009))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Zinc / Zinc Compounds
CAS Number: 7440-66-6
Test Method: Unspecified
Pollutant Group(s): (Heavy Metals , InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: SIP
Control Method: (B) annual DOT pressure tests per requirements of 49 CFR §180.407 for the tank trucks. Collected vapors from the truck loading of any compound with the VOC vapor pressure at or beyond 0.5 psia at 95oF or at the actual liquid temperature will be controlled by the multi-point ground flare
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID:	TX-0865 (draft)	**Date Determination Last Updated:**	10/03/2019
Corporate/Company Name:	EQUISTAR CHEMICALS, LP	**Permit Number:**	N264, PSDTX1540, GHGPSDTX182
Facility Name:	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	**Permit Date:**	09/09/2019 (actual)
Facility Contact:	KIM FOLEY 281-862-5150	**FRS Number:**	110064622207
Facility Description:	new PDH unit. Includea four heaters, one ground flare, one steam-assisted elevated flare, one cooling tower, one CCR vent scrubber, one ammonia vent scrubber, catalyst handling systems, several tanks/drums, wastewater, fugitive components and MSS activities.	**SIC Code:**	2869
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325199
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	HARRIS		
Facility State:	TX		
Facility ZIP Code:			
Permit Issued By:	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (Agency Name) MICHAEL PARTEE(Agency Contact) (512) 239-3312 michael.partee@tceq.texas.gov		
Other Agency Contact Info:	Ms. Xuan Zhao, (512) 239-1664, Xuan.Zhao@tceq.texas.gov		
Permit Notes:			

Affected Boundaries:	**Boundary Type:**	**Class 1 Area State:**	**Boundary:**	**Distance:**
	CLASS1	AR	Caney Creek	> 250 km

Process/Pollutant Information

PROCESS NAME:	Process Heaters
Process Type:	19.600 (Misc. Boilers, Furnaces, Heaters)
Primary Fuel:	natural gas, process gas
Throughput:	202.00 MMBtu/hr
Process Notes:	

POLLUTANT NAME:	Nitrogen Oxides (NOx)
CAS Number:	10102
Test Method:	Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 5.0000 PPMVD 3% O2 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , SIP
Control Method: (A) SCR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER
Other Applicable Requirements: MACT
Control Method: (P) Good combustion practices, clean fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 50.0000 PPMV 3% O2 1-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT
Control Method: (P) Good combustion practices and low-emitting gaseous fuel.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Good combustion practices and low-emitting gaseous fuel.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Good combustion practices and low-emitting gaseous fuel.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Good combustion practices and low-emitting gaseous fuel.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Good combustion practices and low-emitting gaseous fuel.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Process Heaters MSS
Process Type: 19.600 (Misc. Boilers, Furnaces, Heaters)
Primary Fuel: natural gas, process gas
Throughput: 0
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0100 LB/MMBTU 1-HR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , SIP
Control Method: (B) SCR
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: All other pollutant limits the same as routine operations

Process/Pollutant Information

PROCESS NAME: PDH PROCESS VENTS
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel: NATURAL GAS
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , MACT , SIP
Control Method: (A) MULTIPOINT GROUND FLARE
Est. % Efficiency: 99.500
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: MULTIPOINT GROUND FLARE

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: NATURAL GAS

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements: NSPS , MACT , SIP

Control Method: (P) Good combustion practices, proper design and operation

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , MACT

Control Method: (P) Good combustion practices, proper design and operation

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Good combustion practices, proper design and operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Good combustion practices, proper design and operation
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: MEROX PROCESS VENTS
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel: NATURAL GAS
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , MACT
Control Method: (A) ELEVATED FLARE
Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: MEROX ELEVATED FLARE

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: NATURAL GAS

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements: NSPS , MACT , SIP

Control Method: (P) Good combustion practices, proper design and operation

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , MACT

Control Method: (P) Good combustion practices, proper design and operation

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Good combustion practices, proper design and operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Good combustion practices, proper design and operation
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVES
Process Type: 50.007 (Petroleum Refining Equipment Leaks/Fugitive Emissions)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: METHOD 21
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) 28LAER & 28PI LDAR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 21

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , NESHAP , SIP
Control Method: (P) 28LAER, 28PI LDAR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: COOLING TOWER
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 42.0000 PPBW
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: SIP
Control Method: (P) INDIRECT DESIGN
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 6000.0000 PPMW TDS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (B) DRIFT ELIMINATORS
Est. % Efficiency: 0.005
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 6000.0000 PPMW TDS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (B) DRIFT ELIMINATORS
Est. % Efficiency: 0.005

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 6000.0000 PPMW TDS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (B) DRIFT ELIMINATORS
Est. % Efficiency: 0.005
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Storage Tanks
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements:

Control Method: (P) All tanks contain a material with a VOC partial pressure less than 0.5 psia or have a capacity less than 500 gallons Fixed roof tanks painted white with submerged fill.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Wastewater Collection and Treatment

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements:

Control Method: (B) Process wastewater will be collected via covered sumps and hard-piped to the wastewater tank (EPN: TK8511) and then piped to the existing enhanced wastewater treatment facility (under NSR Permit No. 49120) at the site that will treat the VOCs contained in the wastewater to remove greater than 90%. The wastewater tank emissions are routed to the multi-point ground flare for control at an efficiency of 98%.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Equipment MSS

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements: NSPS , MACT , SIP

Control Method: (P) The uncontrolled equipment clearing is estimated on the total process vessel volume in the unit and a BACT concentration of 10,000 ppmv to opening

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Facility Information

RBLC ID:	TX-0863 (draft)	**Date Determination Last Updated:**	10/11/2019
Corporate/Company Name:	THE DOW CHEMICAL COMPANY	**Permit Number:**	153106 AND N268
Facility Name:	POLYETHYLENE 7 FACILITY	**Permit Date:**	09/03/2019 (actual)
Facility Contact:	FRAN FALCON 979-238-9978	**FRS Number:**	Not Found
Facility Description:	Addition of new polyethylene manufacturing plant at the Dow Freeport Site.	**SIC Code:**	2869
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	325998
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	BRAZORIA		
Facility State:	TX		
Facility ZIP Code:			
Permit Issued By:	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (Agency Name) MICHAEL PARTEE(Agency Contact) (512) 239-3312 michael.partee@tceq.texas.gov		
Other Agency Contact Info:	Mr. Lou Malarcher, P.E., (512) 239-1151, Louis.Malarcher@tceq.texas.gov		
Permit Notes:			

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	OR	Crater Lake NP	> 250 km

Process/Pollutant Information

PROCESS NAME:	Furnace
Process Type:	13.900 (Other Fuels and Combinations (¿100 million BTU/H)(e.g., solid/liquid, liquid/gas))
Primary Fuel:	natural gas
Throughput:	84.27 MMBTU/H
Process Notes:	

POLLUTANT NAME:	Nitrogen Oxides (NOx)
CAS Number:	10102
Test Method:	Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0340 LB/MMBTU HOURLY
Emission Limit 2: 0.0200 LB/MMBTU ANNUAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Ultra low NOX burners and effluent gas recirculation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements:
Control Method: (P) Control of VOC in vent gas from pellet hoppers, blenders, and silos monitored with a continuous FID
Est. % Efficiency: 99.500
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Yes
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 50.0000 PPMV 3% O2
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 5.0000 GR/100 DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) LIMIT SULFUR IN FUEL
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: COOLING TOWER

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements:

Control Method: (P) Monthly monitoring cooling water for VOC content

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) DRIFT ELIMINATOR

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) DRIFT ELIMINATOR
Est. % Efficiency: 0.001
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: WASTEWATER LOADING RACK
Process Type: 99.999 (Other Miscellaneous Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER
Other Applicable Requirements:
Control Method: (P) Tank trucks pressure rated greater than 15 psig and loading operations routed to flare for control of emissions
Est. % Efficiency: 100.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Low Pressure HDPE and LLDPE solution phase plant
Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 39.3000 LB/MMLB MONTHLY
Emission Limit 2: 30.0000 LB/MMLB ANNUAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , MACT , SIP
Control Method: (B) Process vents upstream of pellet dryer controlled; dryer vents uncontrolled and emissions added to residual VOC emissions; residual VOC head space testing after dryer and at product loadout.
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT
Control Method: (A) Visible inspection of filter condition and connection with separate filter for each rail car spreader vent
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Visible inspection of filter condition and connection with separate filter for each rail car spreader vent
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVES
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , SIP
Control Method: (P) 28 MID
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Storage tanks content vapor pressure less than 0.5 psia

Process Type: 42.009 (Volatile Organic Liquid Storage)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER

Other Applicable Requirements: SIP

Control Method: (A) FLARE

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Storage tanks content vapor pressure greater than or equal to 0.5 psia

Process Type: 42.009 (Volatile Organic Liquid Storage)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , SIP
Control Method: (B) IFR AND FLARE
Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: PROCESS VENTS
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel:
Throughput: 0
Process Notes: Process vents that fluctuate in VOC concentration not suitable for recycle or use as fuel

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: LAER
Other Applicable Requirements: SIP
Control Method: (A) FLARE
Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Facility Information

RBLC ID:	OH-0378 (final)	**Date Determination Last Updated:**	06/19/2019
Corporate/Company Name:	PTTGCA PETROCHEMICAL COMPLEX	**Permit Number:**	P0124972
Facility Name:	PTTGCA PETROCHEMICAL COMPLEX	**Permit Date:**	12/21/2018 (actual)
Facility Contact:	PAUL WOJCIECHOWSKI (713)871-5730 PAUL.W@PTTGCAMERICA.COM	**FRS Number:**	Not Found
Facility Description:	Petrochemical Complex	**SIC Code:**	2869
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325110
Permit URL:			
EPA Region:	5	**COUNTRY:**	USA
Facility County:	BELMONT		
Facility State:	OH		
Facility ZIP Code:	43947		
Permit Issued By:	OHIO ENVIRONMENTAL PROTECTION AGENCY (Agency Name) MICHAEL MALESKI(Agency Contact) (614) 644-3613 Michael.Maleski@epa.ohio.gov		
Permit Notes:	Initial installation permit for a world-scale petrochemical complex composed of ethylene and ethylene-based derivative plants to manufacture high-density polyethylene (HDPE) and linear low-density polyethylene/HDPE (LLDPE/HDPE) with the following design capacities: Ethylene Plant: 1,500 KT/year; HDPE Units: two (2) trains of 350 KT/year for each train; and LLDPE/HDPE Units: two (2) trains of 450 KT/year for each train. The petrochemical complex will also involve onsite railcar and truck loading, supporting utilities, infrastructure, storage tanks, logistics facilities, and facilities to produce and/or provide required natural gas, water, air, nitrogen, steam, and electricity to support the operation of process units.		
Facility-wide Emissions:	**Pollutant Name:**	**Facility-wide Emissions Increase:**	

Carbon Monoxide	544.0000 (Tons/Year)
Nitrogen Oxides (NOx)	164.0000 (Tons/Year)
Particulate Matter (PM)	120.0000 (Tons/Year)
Sulfur Oxides (SOx)	23.0000 (Tons/Year)
Volatile Organic Compounds (VOC)	396.0000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: Ethane Cracking Furnaces, 6 identical (B001 - B006)

Process Type: 11.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Tail gas and natural gas

Throughput: 552.00 MMBTU/H

Process Notes: Six identical Ethane Cracking Furnaces 1 through 6; 552 MMBtu/hour cracking furnace burning tail gas, natural gas and ethane (backup only) equipped with low-NOx burners (LNBs) and controlled by selective catalytic reduction (SCR). Limits are for single furnace except as noted.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: EPA/OAR Mthd 7E

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0135 LB/MMBTU HOURLY MAXIMUM. SEE NOTES.

Emission Limit 2: 7.4500 LB/H SEE NOTES.

Standard Emission: 0.0100 LB/MMBTU AS ROLLING 12-MONTH AVG. SEE NOTES.

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) low-NOx burners and SCR with a control efficiency of at least 90%

Est. % Efficiency: 90.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes: 0.0135 lb/MMBtu as an hourly maximum during normal operation and 7.45 lbs/hr, excluding periods of startup, shutdown and hot steam standby. 0.010 lb/MMBtu as a rolling, 12-month average, excluding periods of startup, shutdown and hot steam standby. 0.015 lb/MMBtu as a 3-hour average and 2.18 lbs/hr during decoking. 0.050 lb/MMBtu as a three-hour average and 7.20 lbs/hr during periods of startup, shutdown and hot steam standby. 144.00 tons of NOx per rolling, 12-month period for B001-B006, combined.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Other
Other Test Method: CEM
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 19.3200 LB/H SEE NOTES.
Emission Limit 2: 5.0800 LB/H DURING DECOKING. SEE NOTES.
Standard Emission: 0.0350 LB/MMBTU AS ROLLING 12-MONTH AVG. SEE NOTES.
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper burner design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 0.035 lb/MMBtu as a 12-month rolling average and 19.32 lbs/hr. 5.08 lbs/hr during decoking. 500.00 tons of CO per rolling, 12-month period for B001-B006, combined.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: EPA/OAR Mthd 25
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 4.4200 LB/H
Emission Limit 2: 122.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Standard Emission: 0.0080 LB/MMBTU
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper burner design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 122.00 tons of VOC per rolling, 12-month period for B001-B006, combined.

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: EPA/OAR Mthd 5 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0190 LB/MMBTU DURING DECOKING. SEE NOTES

Emission Limit 2: 2.7600 LB/H SEE NOTES.

Standard Emission: 0.0050 LB/MMBTU EXCLUDING DECOKING. SEE NOTES.

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) All modes except decoking: Proper burner design and good combustion practices. Decoking: Good combustion and operating practices to limit the decoking event of each cracking furnace to maximum of 10 times a year (totally 360 hours per year each furnace) and recycling of decoking vent stream to furnace firebox.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 72.59 tons of PE per rolling, 12-month period for B001-B006, combined.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0100 LB/MMBTU DURING DECOKING. SEE NOTES.

Emission Limit 2: 2.7600 LB/H EXCLUDING DECOKING. SEE NOTES.

Standard Emission: 0.0050 LB/MMBTU EXCLUDING DECOKING. SEE NOTES.

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) All modes except decoking: Proper burner design and good combustion practices. Decoking: Good combustion and operating practices to limit the decoking event of each cracking furnace to maximum of 10 times a year (totally 360 hours per year each furnace) and recycling of decoking vent stream to furnace firebox.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 0.005 lb/MMBtu and 2.76 lbs/hr, excluding periods of decoking. 0.010 lb/MMBtu and 1.45 lbs/hr during decoking. 71.89 tons per rolling, 12-month period for B001-B006, combined

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Other
Other Test Method: Methods 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0100 LB/MMBTU DURING DECOKING. SEE NOTES.
Emission Limit 2: 2.7600 LB/H EXCLUDING DECOKING. SEE NOTES.
Standard Emission: 0.0050 LB/MMBTU EXCLUDING DECOKING. SEE NOTES.
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) All modes except decoking: Proper burner design and good combustion practices. Decoking: Good combustion and operating practices to limit the decoking event of each cracking furnace to maximum of 10 times a year (totally 360 hours per year each furnace) and recycling of decoking vent stream to furnace firebox.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 0.005 lb/MMBtu and 2.76 lbs/hr, excluding periods of decoking. 0.010 lb/MMBtu and 1.45 lbs/hr during decoking. 71.89 tons per rolling, 12-month period for B001-B006, combined.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 1673240.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of low carbon gaseous fuels, good combustion and operating practices, and pollution prevention means by improving energy efficiency

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 1,673,240 tons of carbon dioxide equivalents (CO2e) per rolling, 12-month period for B001-B006, combined.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: 20.0000 % OPACITY AS A 6 MINUTE AVERAGE. SEE NOTE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP

Control Method: (P) All modes except decoking: Proper burner design and good combustion practices. Decoking: Good combustion and operating practices to limit the decoking event of each cracking furnace to maximum of 10 times a year (totally 360 hours per year each furnace) and recycling of decoking vent stream to furnace firebox.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 20 percent opacity as a 6-minute average, except as specified by rule.

Process/Pollutant Information

PROCESS NAME: Natural Gas and Ethane-Fired Steam Boilers (B007 - B009)

Process Type: 11.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Natural gas and ethane

Throughput: 400.00 MMBTU/H

Process Notes: Three identical Steam Boilers 1 through 3; natural gas and ethane-fired steam boiler equipped with ultra-low-NOx burners and flue gas recirculation (FGR) with a maximum fuel input rating of 400 million BTU/hour and an average fuel input rating of 160 MMBtu/hour. Limits are for single boiler except as noted.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Other
Other Test Method: CEM
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0200 LB/MMBTU DURING STARTUP AND SHUTDOWN. SEE NOTES.
Emission Limit 2: 4.0000 LB/H AS ROLLING 30-DAY AVG. SEE NOTES.
Standard Emission: 0.0100 LB/MMBTU AS ROLLING 30-DAY AVG. SEE NOTES.
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) ultra-low NOx burners (ULNB) and flue gas recirculation (FGR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 0.010 lb/MMBtu of actual heat input as a rolling, 30-day average and 4.00 lbs/hr, excluding periods of startup and shutdown. 0.020 lb/MMBtu of actual heat input and 8.00 lbs/hr during periods of startup and shutdown. 8.76 tons of NOx per rolling, 12-month period from B007-B009, combined.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Other
Other Test Method: CEM
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 14.0000 LB/H
Emission Limit 2: 30.7000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Standard Emission: 0.0350 LB/MMBTU AS ROLLING 12-MONTH AVG. SEE NOTES.
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper burner design, good combustion practices and use of only natural gas with ethane backup
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 0.035 lb/MMBtu of actual heat input as a rolling, 12-month average and 14.00 lbs/hr. 30.70 tons of CO per rolling, 12-month period from B007-B009, combined.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.1600 LB/H
Emission Limit 2: 4.7300 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Standard Emission: 0.0054 LB/MMBTU
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper burner design, good combustion practices and use of only natural gas with ethane backup
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 4.73 tons of VOC per rolling, 12-month period for B007-B009, combined.

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: EPA/OAR Mthd 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 2.0000 LB/H
Emission Limit 2: 4.3800 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Standard Emission: 0.0050 LB/MMBTU

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper burner design, good combustion practices and use of only natural gas with ethane backup
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 4.38 tons per rolling, 12-month period for B007-B009, combined.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201A and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 2.0000 LB/H
Emission Limit 2: 4.3800 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Standard Emission: 0.0050 LB/MMBTU
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper burner design, good combustion practices and use of only natural gas with ethane backup
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 4.38 tons per rolling, 12-month period for B007-B009, combined.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Other
Other Test Method: Methods 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 2.0000 LB/H
Emission Limit 2: 4.3800 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: 0.0050 LB/MMBTU

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Proper burner design, good combustion practices and use of only natural gas with ethane backup

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 4.38 tons per rolling, 12-month period for B007-B009, combined.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 102500.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) low carbon intensity gaseous fuels, good combusting and operating practices, and efficiency improvement measures to maximize overall unit energy efficiency.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 102,500 tons of carbon dioxide equivalents (CO2e) per rolling, 12-month period for B007-B009, combined.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: 20.0000 % OPACITY AS A 6 MINUTE AVERAGE. SEE NOTE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP

Control Method: (P) Proper burner design, good combustion practices and use of only natural gas with ethane backup

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 20 percent opacity as a 6-minute average, except as specified by rule.

Process/Pollutant Information

PROCESS NAME: Ethylene Manufacturing Unit (P801)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes: 1,500 KTA ethylene manufacturing process; includes feed preheating, cracking, quenching, compression, caustic scrubbing, precooling/drying, separation, and hydrogenation. Process vents, storage tanks, and startup/shutdown/maintenance/upsets controlled by flare and thermal oxidizer.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) high pressure (HP) flare achieving a destruction efficiency of 98% for VOC emissions and thermal oxidizer (TO) achieving a destruction efficiency of 99.5% for VOC emissions. See notes.

Est. % Efficiency: 99.500

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes: (a) use of closed vent systems controlled with high pressure (HP) flare (emission unit P003) achieving a destruction efficiency of 98% for VOC emissions from the following: (i) startup/shutdown/maintenance/upsets; (ii) spent caustic degassing drum; (iii) spent caustic drain drum; and (iv) pressure relief valve (PRV) leaks/releases. (b) use of thermal oxidizer (TO, emission units P001 and P002) achieving a destruction efficiency of 99.5% for VOC emissions from the following: (i) quench water drain drum; (ii) wet air oxidation unit; (iii) dimethyl disulphide (DMDS) tank; and (iv) wash oil tank; (c) tail gas from the hydrogenation section shall be used as fuel gas for firing in process cracking furnace(s); (d) implementation of a facility specific program reducing fugitive component equipment leaks for applicable component equipment in the ethylene manufacturing unit; (e) implementation of a program to minimize flaring.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Implementation of a facility specific program reducing fugitive component equipment leaks for applicable component equipment in the ethylene manufacturing unit. See emission unit P807 (Fugitive Emissions).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: High-Density Polyethylene Manufacturing Unit #1 (P802)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes: 350 KTA high density polyethylene (HDPE) manufacturing process; includes catalyst activation & feed systems, reactor system, separation/degassing, solvent recovery and pelletizing sections, pellet blending, handling, and storage.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0980 LB/MMBTU SEE NOTES.
Emission Limit 2: 0.5100 LB/H SEE NOTES.
Standard Emission: SEE NOTES
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Limits represent combustion emissions associated with the jackets of two catalyst activator furnaces. 4.47 tons per rolling 12-month period for the two activator furnaces combined.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0820 LB/MMBTU SEE NOTES.
Emission Limit 2: 0.4300 LB/H SEE NOTES.
Standard Emission: SEE NOTES
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Emission limitations represent combustion emissions associated with the jackets of two catalyst activator furnaces. 3.74 tons per rolling 12-month period for the two activator furnaces combined.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0054 LB/MMBTU SEE NOTES.

Emission Limit 2: 0.0300 LB/H SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) Use of closed vent system controlled with high pressure (HP) flare achieving a destruction efficiency of 98% for VOC emissions, use of thermal oxidizer (TO) achieving a destruction efficiency of 99.5% for VOC emissions, implementation of facility specific program reducing fugitive component equipment leaks including applicable component equipment in the polyethylene manufacturing line and implementation of a program to minimize flaring.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: For combustion emissions associated with the jackets of two catalyst activator furnaces: (i) 0.0054 lb/MMBtu; (ii) 0.03 lb/hr (for each individual furnace); and (iii) 0.25 ton per rolling 12-month period for two activator furnaces combined. For HDPE manufacturing process for VOC emissions other than the catalyst activation furnace combustion emissions: i. use of closed vent system controlled with high pressure (HP) flare achieving a destruction efficiency of 98% for VOC emissions from the following: (a) intermediate flash slurry sampler; (b) LSR lights condenser; (c) heavies column; and (d) pressure relief valve (PRV) leaks/releases; ii. use of thermal oxidizer (TO) achieving a destruction efficiency of 99.5% for VOC emissions from the following: (a) LPSR condensate separator; and (b) powder conveying package vent; iii. residual VOC in the polyethylene resin exiting the extruder shall be less than 80 ppmv; iv. The combined VOC emissions for all HDPE manufacturing process vents without VOC control (e.g. not vented to flare or TO) shall not exceed 28.00 tons per rolling 12-month period; v. implementation of facility specific program reducing fugitive component equipment leaks including applicable component equipment in the polyethylene manufacturing line (see C.12.b)(2)b. and c.); and vi. implementation of a program to minimize flaring.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for two catalyst activator jacket vents, two catalyst filter vents, extruder vent, additive vent, six additive feeder vents. Fabric filtration at 0.002 gr/dscf for pellet conveying hopper vent, pellet hopper vent, 24 pellet & off-spec blender/silo vents, and pellet dryer fan vent (only vent requiring stack test). Catalyst activation system vents associated with co-catalyst container changes shall be controlled by passing vent streams through a seal pot containing mineral oil resulting only in emissions of nitrogen gas used in co-catalyst transfer.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Combustion emissions associated with the jackets of two catalyst activator furnaces: 0.0075 lb/MMBtu, 0.04 lb/h (each individual furnace), 0.34 ton per rolling 12-month period for two activator furnaces combined. Catalyst activator jacket vents (R-201A and B): 0.005 gr/dscf, 0.10 lb/h and 0.44 ton per rolling 12-month period. Catalyst filter vents (S-203A and B): 0.005 gr/dscf, 0.0015 lb/hr and 0.006 ton per rolling 12-month period. Extruder vent filter (3S-603): 0.005 gr/dscf, 0.015 lb/hr and 0.065 ton per rolling 12-month period. Additive vent filter (3S-604): 0.005 gr/dscf, 0.04 lb/hr and 0.175 ton per rolling 12-month period. Additive feeder vents (3Q-602A through F): 0.005 gr/dscf, 0.001 lb/hr and 0.0044 ton per rolling 12-month period for each individual vent (6 individual vents). Pellet conveying hopper vent (3V-607): 0.002 gr/dscf, 0.004 lb/hr and 0.0175 ton per rolling 12-month period. Pellet hopper vent (3V-702): 0.002 gr/dscf, 0.06 lb/hr and 0.263 tons per rolling 12-month period. Pellet & off-spec blender/silo vents (3V-701A through E) & (PE1-19): 0.002 gr/dscf, 0.036 lb/hr & 0.162 ton per rolling 12-month period for six vents combined. Pellet dryer fan vent (3C-603): 0.002 gr/dscf, 0.134 lb/hr & 0.587 ton per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Methods 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for two catalyst activator jacket vents, two catalyst filter vents, extruder vent, additive vent, six additive feeder vents. Fabric filtration at 0.002 gr/dscf for pellet conveying hopper vent, pellet hopper vent, 24 pellet & off-spec blender/silo vents, and pellet dryer fan vent (only vent requiring stack test). Catalyst activation system vents associated with co-catalyst container changes shall be controlled by passing vent streams through a seal pot containing mineral oil resulting only in emissions of nitrogen gas used in co-catalyst transfer.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Combustion emissions associated with the jackets of two catalyst activator furnaces: 0.0075 lb/MMBtu, 0.04 lb/h (each individual furnace), 0.34 ton per rolling 12-month period for two activator furnaces combined. Catalyst activator jacket vents (R-201A and B): 0.005 gr/dscf, 0.10 lb/h and 0.44 ton per rolling 12-month period. Catalyst filter vents (S-203A and B): 0.005 gr/dscf, 0.0015 lb/hr and 0.006 ton per rolling 12-month period. Extruder vent filter (3S-603): 0.005 gr/dscf, 0.015 lb/hr and 0.065 ton per rolling 12-month period. Additive vent filter (3S-604): 0.005 gr/dscf, 0.04 lb/hr and 0.175 ton per rolling 12-month period. Additive feeder vents (3Q-602A through F): 0.005 gr/dscf, 0.001 lb/hr and 0.0044 ton per rolling 12-month period for each individual vent (6 individual vents). Pellet conveying hopper vent (3V-607): 0.002 gr/dscf, 0.004 lb/hr and 0.0175 ton per rolling 12-month period. Pellet hopper vent (3V-702): 0.002 gr/dscf, 0.06 lb/hr and 0.263 tons per rolling 12-month period. Pellet & off-spec blender/silo vents (3V-701A through E) & (PE1-19): 0.002 gr/dscf, 0.036 lb/hr & 0.162 ton per rolling 12-month period for six vents combined. Pellet dryer fan vent (3C-603): 0.002 gr/dscf, 0.134 lb/hr & 0.587 ton per rolling 12-month period.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP

Control Method: (A) Fabric filtration at 0.005 gr/dscf for two catalyst activator jacket vents, two catalyst filter vents, extruder vent, additive vent, six additive feeder vents. Fabric filtration at 0.002 gr/dscf for pellet conveying hopper vent, pellet hopper vent, 24 pellet & off-spec blender/silo vents, and pellet dryer fan vent (only vent requiring stack test). Catalyst activation system vents associated with co-catalyst container changes shall be controlled by passing vent streams through a seal pot containing mineral oil resulting only in emissions of nitrogen gas used in co-catalyst transfer.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Visible particulate emissions from each process vent stack controlled with fabric filtration shall not exceed five percent opacity, as a six-minute average. No visible emissions of fugitive particulate from the discharge of co-catalyst material to the atmospheric sand pit. SIP: 20 percent opacity as a 6-minute average, except as specified by rule.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 117.0000 LB/MMBTU

Emission Limit 2: 5335.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Low carbon intensity gaseous fuels, good combusting and operating practices, and efficiency improvement measures to maximize overall unit energy efficiency.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 5335 t/yr per rolling 12-month period for two activator furnaces combined.

Process/Pollutant Information

PROCESS NAME: High-Density Polyethylene Manufacturing Unit #2 (P803)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes: 350 KTA high density polyethylene (HDPE) manufacturing process; includes catalyst activation & feed systems, reactor system, separation/degassing, solvent recovery and pelletizing sections, pellet blending, handling, and storage.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 117.0000 LB/MMBTU

Emission Limit 2: 5335.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Low carbon intensity gaseous fuels, good combusting and operating practices, and efficiency improvement measures to maximize overall unit energy efficiency.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 5335 t/yr per rolling 12-month period for two activator furnaces combined.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0820 LB/MMBTU SEE NOTES.

Emission Limit 2: 0.4300 LB/H SEE NOTES.

Standard Emission: SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Emission limitations represent combustion emissions associated with the jackets of two catalyst activator furnaces. 3.74 tons per rolling 12-month period for the two activator furnaces combined.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0980 LB/MMBTU SEE NOTES.
Emission Limit 2: 0.5100 LB/H SEE NOTES.
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Limits represent combustion emissions associated with the jackets of two catalyst activator furnaces. 4.47 tons per rolling 12-month period for the two activator furnaces combined.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201A and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTES.
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for two catalyst activator jacket vents, two catalyst filter vents, extruder vent, additive vent, six additive feeder vents. Fabric filtration at 0.002 gr/dscf for pellet conveying hopper vent, pellet hopper vent, 24 pellet & off-spec blender/silo vents, and pellet dryer fan vent (only vent requiring stack test). Catalyst activation system vents associated with co-catalyst container changes shall be controlled by passing vent streams through a seal pot containing mineral oil resulting only in emissions of nitrogen gas used in co-catalyst transfer.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Combustion emissions associated with the jackets of two catalyst activator furnaces: 0.0075 lb/MMBtu, 0.04 lb/h (each individual furnace), 0.34 ton per rolling 12-month period for two activator furnaces combined. Catalyst activator jacket vents (R-201A and B): 0.005 gr/dscf, 0.10 lb/h and 0.44 ton per rolling 12-month period. Catalyst filter vents (S-203A and B): 0.005 gr/dscf, 0.0015 lb/hr and 0.006 ton per rolling 12-month period. Extruder vent filter (3S-603): 0.005 gr/dscf, 0.015 lb/hr and 0.065 ton per rolling 12-month period. Additive vent filter (3S-604): 0.005 gr/dscf, 0.04 lb/hr and 0.175 ton per rolling 12-month period. Additive feeder vents (3Q-602A through F): 0.005 gr/dscf, 0.001 lb/hr and 0.0044 ton per rolling 12-month period for each individual vent (6 individual vents). Pellet conveying hopper vent (3V-607): 0.002 gr/dscf, 0.004 lb/hr and 0.0175 ton per rolling 12-month period. Pellet hopper vent (3V-702): 0.002 gr/dscf, 0.06 lb/hr and 0.263 tons per rolling 12-month period. Pellet & off-spec blender/silo vents (3V-701A through E) & (PE1-19): 0.002 gr/dscf, 0.036 lb/hr & 0.162 ton per rolling 12-month period for six vents combined. Pellet dryer fan vent (3C-603): 0.002 gr/dscf, 0.134 lb/hr & 0.587 ton per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Methods 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for two catalyst activator jacket vents, two catalyst filter vents, extruder vent, additive vent, six additive feeder vents. Fabric filtration at 0.002 gr/dscf for pellet conveying hopper vent, pellet hopper vent, 24 pellet & off-spec blender/silo vents, and pellet dryer fan vent (only vent requiring stack test). Catalyst activation system vents associated with co-catalyst container changes shall be controlled by passing vent streams through a seal pot containing mineral oil resulting only in emissions of nitrogen gas used in co-catalyst transfer.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Combustion emissions associated with the jackets of two catalyst activator furnaces: 0.0075 lb/MMBtu, 0.04 lb/h (each individual furnace), 0.34 ton per rolling 12-month period for two activator furnaces combined. Catalyst activator jacket vents (R-201A and B): 0.005 gr/dscf, 0.10 lb/h and 0.44 ton per rolling 12-month period. Catalyst filter vents (S-203A and B): 0.005 gr/dscf, 0.0015 lb/hr and 0.006 ton per rolling 12-month period. Extruder vent filter (3S-603): 0.005 gr/dscf, 0.015 lb/hr and 0.065 ton per rolling 12-month period. Additive vent filter (3S-604): 0.005 gr/dscf, 0.04 lb/hr and 0.175 ton per rolling 12-month period. Additive feeder vents (3Q-602A through F): 0.005 gr/dscf, 0.001 lb/hr and 0.0044 ton per rolling 12-month period for each individual vent (6 individual vents). Pellet conveying hopper vent (3V-607): 0.002 gr/dscf, 0.004 lb/hr and 0.0175 ton per rolling 12-month period. Pellet hopper vent (3V-702): 0.002 gr/dscf, 0.06 lb/hr and 0.263 tons per rolling 12-month period. Pellet & off-spec blender/silo vents (3V-701A through E) & (PE1-19): 0.002 gr/dscf, 0.036 lb/hr & 0.162 ton per rolling 12-month period for six vents combined. Pellet dryer fan vent (3C-603): 0.002 gr/dscf, 0.134 lb/hr & 0.587 ton per rolling 12-month period.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP

Control Method: (A) Fabric filtration at 0.005 gr/dscf for two catalyst activator jacket vents, two catalyst filter vents, extruder vent, additive vent, six additive feeder vents. Fabric filtration at 0.002 gr/dscf for pellet conveying hopper vent, pellet hopper vent, 24 pellet & off-spec blender/silo vents, and pellet dryer fan vent (only vent requiring stack test). Catalyst activation system vents associated with co-catalyst container changes shall be controlled by passing vent streams through a seal pot containing mineral oil resulting only in emissions of nitrogen gas used in co-catalyst transfer.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Visible particulate emissions from each process vent stack controlled with fabric filtration shall not exceed five percent opacity, as a six-minute average. No visible emissions of fugitive particulate from the discharge of co-catalyst material to the atmospheric sand pit. SIP: 20 percent opacity as a 6-minute average, except as specified by rule.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0054 LB/MMBTU SEE NOTES.

Emission Limit 2: 0.0300 LB/H SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) Use of closed vent system controlled with high pressure (HP) flare achieving a destruction efficiency of 98% for VOC emissions, use of thermal oxidizer (TO) achieving a destruction efficiency of 99.5% for VOC emissions, implementation of facility specific program reducing fugitive component equipment leaks including applicable component equipment in the polyethylene manufacturing line and implementation of a program to minimize flaring.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: For combustion emissions associated with the jackets of two catalyst activator furnaces: (i) 0.0054 lb/MMBtu; (ii) 0.03 lb/hr (for each individual furnace); and (iii) 0.25 ton per rolling 12-month period for two activator furnaces combined. For HDPE manufacturing process for VOC emissions other than the catalyst activation furnace combustion emissions: i. use of closed vent system controlled with high pressure (HP) flare achieving a destruction efficiency of 98% for VOC emissions from the following: (a) intermediate flash slurry sampler; (b) LSR lights condenser; (c) heavies column; and (d) pressure relief valve (PRV) leaks/releases; ii. use of thermal oxidizer (TO) achieving a destruction efficiency of 99.5% for VOC emissions from the following: (a) LPSR condensate separator; and (b) powder conveying package vent; iii. residual VOC in the polyethylene resin exiting the extruder shall be less than 80 ppmv; iv. The combined VOC emissions for all HDPE manufacturing process vents without VOC control (e.g. not vented to flare or TO) shall not exceed 28.00 tons per rolling

12-month period; v. implementation of facility specific program reducing fugitive component equipment leaks including applicable component equipment in the polyethylene manufacturing line (see C.12.b)(2)b. and c.); and vi. implementation of a program to minimize flaring.

Process/Pollutant Information

PROCESS NAME: Linear Low/High-Density Polyethylene Manufacturing Unit #3 (P804)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes: 450 KTA linear low-density polyethylene (LLDPE)/high density polyethylene (HDPE) manufacturing process; includes purification (ethylene & raw material), catalyst system, reactor system, resin degassing and vent recovery, seed bed & granular storage system, and additive handling and pelletizing.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 80.0000 PPM BY VOLUME. SEE NOTES.

Emission Limit 2: 36.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) Thermal oxidizer with a destruction efficiency of 99.5% from analyzer vents, degassing column vents, ethylene purification, low product purge bin vent filter, and high pressure accumulator vent. Closed vent system controlled with flare (high pressure (HP) and/or low pressure (LP)) with a destruction efficiency of 98% from butene dryer regen vent, hexene dryer regen vent, ICA dryer regen vent, ethylene deoxo regen vent, ethylene dryers regen vent, ethylene systems shutdown, non-emergency reactor vents, and product purge bin vent filter. Pressure safety valve (PSV) leaks/releases from raw materials supply pressure PSVs, purification PSVs, reaction PSVs, resin degassing PSVs, and vent recovery PSVs. Implementation of facility specific program reducing fugitive component equipment leaks including applicable component equipment in the polyethylene manufacturing line. Implementation of a program to minimize flaring.

Est. % Efficiency: 99.500

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes: Residual VOC in the polyethylene resin exiting the granular resin surge hopper shall be less than 80 ppmv. The combined VOC emissions for all LLDPE/HDPE manufacturing process vents without VOC control (e.g. not vented to flare or TO) shall not exceed 36.00 tons per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for the catalyst vent filter (Y-4901) and receiver bin filter vent (Y-5657) & seed bed filter vents (Y-5651 through 5655). Fabric filtration at 0.002 gr/dscf for granular resin surge hopper vent filter (D-6210), bag dump stations/dump hoppers vent filter (Y-6231 through 6235), talc surge bin filter (Y-6251), mixer vent filter (Y-6260), pellet conveying hopper (PE3-07), pellet hopper (PE3-08), and pellet blending/off-spec blending silos (PE3-09 through PE3-15). Pellet dryer vent (Y-7010) shall not exceed a maximum outlet concentration of 0.002 gr/dscf.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Catalyst vent filter (Y-4901): 0.005 gr/dscf, 0.035 lb/hr and 0.153 ton per rolling 12-month period. Receiver bin filter vent (Y-5657) & seed bed filter vents (Y-5651 through 5655): 0.005 gr/dscf, 0.08 lb/hr and 0.35 ton per rolling 12-month period. Granular resin surge hopper vent filter (D-6210): 0.002 gr/dscf, 0.042 lb/hr and 0.184 ton per rolling 12-month period. Bag dump stations/dump hoppers vent filter (Y-6231 through 6235): 0.002 gr/dscf, 0.0515 lb/hr and 0.226 ton per rolling 12-month period. Talc surge bin filter (Y-6251): 0.002 gr/dscf, 0.012 lb/hr and 0.053 ton per rolling 12-month period. Mixer vent filter (Y-6260): 0.002 gr/dscf, 0.009 lb/hr and 0.039 ton per rolling 12-month period. Pellet conveying hopper (PE3-07): 0.002 gr/dscf, 0.004 lb/hr and 0.018 ton per rolling 12-month period. Pellet hopper (PE3-08): 0.002 gr/dscf, 0.06 lb/hr and 0.26 ton per rolling 12-month period. Pellet blending/off-spec blending silos (PE3-09 through PE3-15): 0.002 gr/dscf, 0.048 lb/hr and 0.208 ton per rolling 12-month period for all vents combined. Pellet dryer vent (Y-7010) shall not exceed a maximum outlet concentration of 0.002 gr/dscf, 0.05 lb/hr and 0.11 ton per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Methods 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for the catalyst vent filter (Y-4901) and receiver bin filter vent (Y-5657) & seed bed filter vents (Y-5651 through 5655). Fabric filtration at 0.002 gr/dscf for granular resin surge hopper vent filter (D-6210), bag dump stations/dump hoppers vent filter (Y-6231 through 6235), talc surge bin filter (Y-6251), mixer vent filter (Y-6260), pellet conveying hopper (PE3-07), pellet hopper (PE3-08), and pellet blending/off-spec blending silos (PE3-09 through PE3-15). Pellet dryer vent (Y-7010) shall not exceed a maximum outlet concentration of 0.002 gr/dscf.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Catalyst vent filter (Y-4901): 0.005 gr/dscf, 0.035 lb/hr and 0.153 ton per rolling 12-month period. Receiver bin filter vent (Y-5657) & seed bed filter vents (Y-5651 through 5655): 0.005 gr/dscf, 0.08 lb/hr and 0.35 ton per rolling 12-month period. Granular resin surge hopper vent filter (D-6210): 0.002 gr/dscf, 0.042 lb/hr and 0.184 ton per rolling 12-month period. Bag dump stations/dump hoppers vent filter (Y-6231 through 6235): 0.002 gr/dscf, 0.0515 lb/hr and 0.226 ton per rolling 12-month period. Talc surge bin filter (Y-6251): 0.002 gr/dscf, 0.012 lb/hr and 0.053 ton per rolling 12-month period. Mixer vent filter (Y-6260): 0.002 gr/dscf, 0.009 lb/hr and 0.039 ton per rolling 12-month period. Pellet conveying hopper (PE3-07): 0.002 gr/dscf, 0.004 lb/hr and 0.018 ton per rolling 12-month period. Pellet hopper (PE3-08): 0.002 gr/dscf, 0.06 lb/hr and 0.26 ton per rolling 12-month period. Pellet blending/off-spec blending silos (PE3-09 through PE3-15): 0.002 gr/dscf, 0.048 lb/hr and 0.208 ton per rolling 12-month period for all vents combined. Pellet dryer vent (Y-7010) shall not exceed a maximum outlet concentration of 0.002 gr/dscf, 0.05 lb/hr and 0.11 ton per rolling 12-month period.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: 5.0000 % OPACITY AS A 6 MINUTE AVERAGE. SEE NOTE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for the catalyst vent filter (Y-4901) and receiver bin filter vent (Y-5657) & seed bed filter vents (Y-5651 through 5655). Fabric filtration at 0.002 gr/dscf for granular resin surge hopper vent filter (D-6210), bag dump stations/dump hoppers vent filter (Y-6231 through 6235), talc surge bin filter (Y-6251), mixer vent filter (Y-6260), pellet conveying hopper (PE3-07), pellet hopper (PE3-08), and pellet blending/off-spec blending silos (PE3-09 through PE3-15). Pellet dryer vent (Y-7010) shall not exceed a maximum outlet concentration of 0.002 gr/dscf.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 5% opacity as a 6 minute average from the following stacks: Catalyst vent filter (Y-4901), Receiver bin filter vent (Y-5657) & seed bed filter vents (Y-5651 through 5655), Granular resin surge hopper vent filter (D-6210), Bag dump stations/dump hoppers vent filter (Y-6231 through 6235), Talc surge bin filter (Y-6251), Mixer vent filter (Y-6260), Pellet conveying hopper (PE3-07), Pellet hopper (PE3-08), Pellet blending/off-spec blending silos (PE3-09 through PE3-15), and Pellet dryer vent (Y-7010)

Process/Pollutant Information

PROCESS NAME: Linear Low/High-Density Polyethylene Manufacturing Unit #4 (P805)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes: 450 KTA linear low-density polyethylene (LLDPE)/high density polyethylene (HDPE) manufacturing process; includes purification (ethylene & raw material), catalyst system, reactor system, resin degassing and vent recovery, seed bed & granular storage system, and additive handling and pelletizing.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 80.0000 PPM BY VOLUME. SEE NOTES.

Emission Limit 2: 36.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) Thermal oxidizer with a destruction efficiency of 99.5% from analyzer vents, degassing column vents, ethylene purification, low product purge bin vent filter, and high pressure accumulator vent. Closed vent system controlled with flare (high pressure (HP) and/or low pressure (LP)) with a destruction efficiency of 98% from butene dryer regen vent, hexene dryer regen vent, ICA dryer regen vent, ethylene deoxo regen vent, ethylene dryers regen vent, ethylene systems shutdown, non-emergency reactor vents, and product purge bin vent filter. Pressure safety valve (PSV) leaks/releases from raw materials supply pressure PSVs, purification PSVs, reaction PSVs, resin degassing PSVs, and vent recovery PSVs. Implementation of facility specific program reducing fugitive component equipment leaks including applicable component equipment in the polyethylene manufacturing line. Implementation of a program to minimize flaring.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Residual VOC in the polyethylene resin exiting the granular resin surge hopper shall be less than 80 ppmv. The combined VOC emissions for all LLDPE/HDPE manufacturing process vents without VOC control (e.g. not vented to flare or TO) shall not exceed 36.00 tons per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for the catalyst vent filter (Y-4902) and receiver bin filter vent (Y-5957) & seed bed filter vents (Y-5651 through 5655). Fabric filtration at 0.002 gr/dscf for granular resin surge hopper vent filter (D-6510), bag dump stations/dump hoppers vent filter (Y-6531 through 6535), talc surge bin filter (Y-6551), mixer vent filter (Y-6560), pellet conveying hopper (PE4-07), pellet hopper (PE4-08), and pellet blending/off-spec blending silos (PE4-09 through PE4-15). Pellet dryer vent (Y-7310) shall not exceed a maximum outlet concentration of 0.002 gr/dscf.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Catalyst vent filter (Y-4902): 0.005 gr/dscf, 0.035 lb/hr and 0.153 ton per rolling 12-month period. Receiver bin filter vent (Y-5957) & seed bed filter vents (Y-5651 through 5655): 0.005 gr/dscf, 0.08 lb/hr and 0.35 ton per rolling 12-month period. Granular resin surge hopper vent filter (D-6510): 0.002 gr/dscf, 0.042 lb/hr and 0.184 ton per rolling 12-month period. Bag dump stations/dump hoppers vent filter (Y-6531 through 6535): 0.002 gr/dscf, 0.0515 lb/hr and 0.226 ton per rolling 12-month period. Talc surge bin filter (Y-6551): 0.002 gr/dscf, 0.012 lb/hr and 0.053 ton per rolling 12-month period. Mixer vent filter (Y-6560): 0.002 gr/dscf, 0.009 lb/hr and 0.039 ton per rolling 12-month period. Pellet conveying hopper (PE4-07): 0.002 gr/dscf, 0.004 lb/hr and 0.018 ton per rolling 12-month period. Pellet hopper (PE4-08): 0.002 gr/dscf, 0.06 lb/hr and 0.26 ton per rolling 12-month period. Pellet blending/off-spec blending silos (PE4-09 through PE4-15): 0.002 gr/dscf, 0.048 lb/hr and 0.208 ton per rolling 12-month period for all vents combined. Pellet dryer vent (Y-7310) shall not exceed a maximum outlet concentration of 0.002 gr/dscf, 0.05 lb/hr and 0.11 ton per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Methods 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for the catalyst vent filter (Y-4902) and receiver bin filter vent (Y-5957) & seed bed filter vents (Y-5651 through 5655). Fabric filtration at 0.002 gr/dscf for granular resin surge hopper vent filter (D-6510), bag dump stations/dump hoppers vent filter (Y-6531 through 6535), talc surge bin filter (Y-6551), mixer vent filter (Y-6560), pellet conveying hopper (PE4-07), pellet hopper (PE4-08), and pellet blending/off-spec blending silos (PE4-09 through PE4-15). Pellet dryer vent (Y-7310) shall not exceed a maximum outlet concentration of 0.002 gr/dscf.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Catalyst vent filter (Y-4902): 0.005 gr/dscf, 0.035 lb/hr and 0.153 ton per rolling 12-month period. Receiver bin filter vent (Y-5957) & seed bed filter vents (Y-5651 through 5655): 0.005 gr/dscf, 0.08 lb/hr and 0.35 ton per rolling 12-month period. Granular resin surge hopper vent filter (D-6510): 0.002 gr/dscf, 0.042 lb/hr and 0.184 ton per rolling 12-month period. Bag dump stations/dump hoppers vent filter (Y-6531 through 6535): 0.002 gr/dscf, 0.0515 lb/hr and 0.226 ton per rolling 12-month period. Talc surge bin filter (Y-6551): 0.002 gr/dscf, 0.012 lb/hr and 0.053 ton per rolling 12-month period. Mixer vent filter (Y-6560): 0.002 gr/dscf, 0.009 lb/hr and 0.039 ton per rolling 12-month period. Pellet conveying hopper (PE4-07): 0.002 gr/dscf, 0.004 lb/hr and 0.018 ton per rolling 12-month period. Pellet hopper (PE4-08): 0.002 gr/dscf, 0.06 lb/hr and 0.26 ton per rolling 12-month period. Pellet blending/off-spec blending silos (PE4-09 through PE4-15): 0.002 gr/dscf, 0.048 lb/hr and 0.208 ton per rolling 12-month period for all vents combined. Pellet dryer vent (Y-7310) shall not exceed a maximum outlet concentration of 0.002 gr/dscf, 0.05 lb/hr and 0.11 ton per rolling 12-month period.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: 5.0000 % OPACITY AS A 6 MINUTE AVERAGE. SEE NOTE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.005 gr/dscf for the catalyst vent filter (Y-4902) and receiver bin filter vent (Y-5957) & seed bed filter vents (Y-5651 through 5655). Fabric filtration at 0.002 gr/dscf for granular resin surge hopper vent filter (D-6510), bag dump stations/dump hoppers vent filter (Y-6531 through 6535), talc surge bin filter (Y-6551), mixer vent filter (Y-6560), pellet conveying hopper (PE4-07), pellet hopper (PE4-08), and pellet blending/off-spec blending silos (PE4-09 through PE4-15). Pellet dryer vent (Y-7310) shall not exceed a maximum outlet concentration of 0.002 gr/dscf.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 5% opacity as a 6 minute average from the following stacks: Catalyst vent filter (Y-4902), Receiver bin filter vent (Y-5957) & seed bed filter vents (Y-5651 through 5655), Granular resin surge hopper vent filter (D-6510), Bag dump stations/dump hoppers vent filter (Y-6531 through 6535), Talc surge bin filter (Y-6551), Mixer vent filter (Y-6560), Pellet conveying hopper (PE4-07), Pellet hopper (PE4-08), Pellet blending/off-spec blending silos (PE4-09 through PE4-15), and Pellet dryer vent (Y-7310)

Process/Pollutant Information

PROCESS NAME: OSBL Thermal Oxidizers (P001 and P002)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel: Natural gas

Throughput: 6.20 MMBTU/H

Process Notes: Two identical OSBL Thermal Oxidizers 1 and 2; 6.2 MMBtu/hr thermal oxidizer. Thermal oxidizer control is used to meet control requirements associated with BACT, NSPS, BAT, MACT, and NESHAP for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001. It should be noted that the thermal oxidizer control system consists of two identical thermal oxidizers (P001 and P002). One thermal oxidizer will be operational and providing required control at all times while the other unit is ready for use as a backup. Limits are for single oxidizer except as noted.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: EPA/OAR Mthd 10

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.5100 LB/H SEE NOTES.

Emission Limit 2: 2.2200 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of pipeline natural gas for TO pilots

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Thermal oxidizer control is used to meet control requirements associated with BACT, New Source Performance Standards (NSPS), BAT, Maximum Achievable Control Technology, and National Emission Standards for Hazardous Air Pollutants for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805,

and J001.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: EPA/OAR Mthd 7

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.6100 LB/H SEE NOTES.

Emission Limit 2: 2.6700 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of pipeline natural gas for TO pilots

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Thermal oxidizer control is used to meet control requirements associated with BACT, New Source Performance Standards (NSPS), BAT, Maximum Achievable Control Technology, and National Emission Standards for Hazardous Air Pollutants for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0500 LB/H SEE NOTES.

Emission Limit 2: 0.2000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of pipeline natural gas for TO pilots

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Thermal oxidizer control is used to meet control requirements associated with BACT, New Source Performance Standards (NSPS), BAT, Maximum Achievable Control Technology, and National Emission Standards for Hazardous Air Pollutants for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Methods 201A and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0500 LB/H SEE NOTES.

Emission Limit 2: 0.2000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of pipeline natural gas for TO pilots

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Thermal oxidizer control is used to meet control requirements associated with BACT, New Source Performance Standards (NSPS), BAT, Maximum Achievable Control Technology, and National Emission Standards for Hazardous Air Pollutants for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: EPA/OAR Mthd 25A

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0300 LB/H SEE NOTES.

Emission Limit 2: 0.1400 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001. The control efficiency is 99.5%.

Est. % Efficiency: 99.500

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Thermal oxidizer control is used to meet control requirements associated with BACT, New Source Performance Standards (NSPS), BAT, Maximum Achievable Control Technology, and National Emission Standards for Hazardous Air Pollutants for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 3161.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of pipeline natural gas for TO pilots

Est. % Efficiency:

Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Thermal oxidizer control is used to meet control requirements associated with BACT, New Source Performance Standards (NSPS), BAT, Maximum Achievable Control Technology, and National Emission Standards for Hazardous Air Pollutants for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001.

POLLUTANT NAME:	Visible Emissions (VE)
CAS Number:	VE
Test Method:	EPA/OAR Mthd 9
Pollutant Group(s):	
Emission Limit 1:	
Emission Limit 2:	
Standard Emission:	5.0000 % OPACITY AS A 6 MINUTE AVERAGE. SEE NOTE
Did factors, other then air pollution technology considerations influence the BACT decisions:	U
Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	
Control Method:	(P) use of pipeline natural gas for TO pilots
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Thermal oxidizer control is used to meet control requirements associated with BACT, New Source Performance Standards (NSPS), BAT, Maximum Achievable Control Technology, and National Emission Standards for Hazardous Air Pollutants for affected facility operations, storage tanks, and process vents. For efficient permitting structure, the thermal oxidizer has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The thermal oxidizer controls VOC emissions from units P801, P802, P803, P804, P805, and J001.

Process/Pollutant Information

PROCESS NAME: High Pressure Ground Flare (P003)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: Natural gas

Throughput: 1.80 MMBTU/H

Process Notes: 1.8 MMBtu/hr high-pressure, multi-point, staged ground flare. The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 2.9171 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.5360 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0590 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0590 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 4.4940 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805. The control efficiency is 98%

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes: The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 923.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: No visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

Process/Pollutant Information

PROCESS NAME: Low Pressure Ground Flare (P004)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: Natural gas

Throughput: 0.78 MMBTU/H

Process Notes: 0.78 MMBtu/hr low-pressure, multi-point, staged ground flare. The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.9700 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) The low pressure (LP) flare controls VOC emissions from units P804 and P805. The control efficiency is 98%.

Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 1.2600 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) use of natural gas as pilot light fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.2320 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0260 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0260 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 400.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) use of natural gas as pilot light fuel

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: No visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.

Process/Pollutant Information

PROCESS NAME: Wastewater Collection and Treatment (P806)

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes: Wastewater treatment plant and associated collection and treatment systems for treatment of wastewater generated in the ethylene manufacturing process, the high-density polyethylene units, the linear low-density polyethylene units, the air separation unit, and all sanitary wastewater; includes an oily water treatment plant, a process biological treatment plant and a sanitary treatment plant; emissions sources include: a 12% NaClO2 storage tank (T-5205) and a 98% sulfuric acid storage tank (T-3502) vented to atmosphere, a wet air oxidation unit, an equalization tank (T-6503), an oily wastewater storage tank (T-6501), a corrugated plate interceptor (CPI) package, a waste oil tank (T-6502), a dissolved gas floatation (DGF) unit and GCF/CPI sump covered and vented to one primary and one backup 1.0 MMBtu/hr thermal oxidizers

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: EPA/OAR Mthd 25A

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0100 LB/H

Emission Limit 2: 0.0200 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT

Control Method: (B) i. Use an enhanced biodegradation unit to maintain the annual benzene quantity from facility waste at less than 10 megagrams (MG; 11 tons) by combining waste streams with greater than 10 ppmw benzene with waste streams with less than 10 ppmw benzene to form a combined waste stream with a benzene concentration less than 10 ppmw; ii. Route emissions from wastewater generated in the ethylene manufacturing process to a thermal oxidizer designed to achieve >99.5% destruction efficiency for volatile organic compounds (VOC); iii. Cover and route emissions from the process wastewater equalization tank (T-6503), the waste oil drum (T-6502), the oily wastewater storage tank (T-6501) and the wet air oxidation unit to a thermal oxidizer designed to achieve >99.5% destruction efficiency for VOC; iv. Emissions from wastewater generated in the high-density polyethylene units must comply with the applicable requirements of 40 CFR Part 63, Subpart FFFF.

Est. % Efficiency: 99.500

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: EPA/OAR Mthd 7
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0980 LB/H
Emission Limit 2: 0.4300 T/YR PER ROLLING 12 MONTH PERIOD
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0820 LB/H
Emission Limit 2: 0.3600 T/YR PER ROLLING 12 MONTH PERIOD
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM

Test Method: EPA/OAR Mthd 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0080 LB/H
Emission Limit 2: 0.0300 T/YR PER ROLLING 12 MONTH PERIOD
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201A and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0080 LB/H
Emission Limit 2: 0.0300 T/YR PER ROLLING 12 MONTH PERIOD
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM

Test Method: Other
Other Test Method: Methods 201 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0080 LB/H
Emission Limit 2: 0.0300 T/YR PER ROLLING 12 MONTH PERIOD
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):
Emission Limit 1:
Emission Limit 2:
Standard Emission: 5.0000 % OPACITY AS A 6 MINUTE AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO_2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 513.0000 T/YR PER ROLLING 12 MONTH PERIOD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fugitive Emissions (P807)
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput: 0
Process Notes: Facility-wide fugitive emissions from equipment and process unit leaks

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 99.3800 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT

Control Method:	(A) Enhanced connector monitoring requirements to the most stringent leak detection and repair (LDAR) regulation applicable to affected equipment/process units. The following identifies LDAR requirements for affected equipment/process units which have been determined to representative of BACT: i. 40 CFR Part 63 Subpart UU as applicable to the ethylene manufacturing process with enhanced connector monitoring; ii. 40 CFR Part 60 Subpart VVa as applicable to the polyethylene manufacturing process with enhanced connector monitoring; The LDAR programs indicated above which are representative of BACT shall implement the following enhanced connector monitoring requirements: i. connector monitoring subsequent to the initial monitoring required shall be performed on a quarterly basis; ii. if following the initial four (4) consecutive quarters, the percent leaking connectors in a process unit is less than 0.5 percent during the most recent quarterly monitoring event, then the frequency of connector monitoring can be reduced to semi-annual; iii. if following two (2) consecutive semi-annual periods, the percent leaking connectors in a process unit is less than 0.5 percent during the most recent semi-annual monitoring event, then the frequency of connector monitoring can be reduced to annual. iv. If more than or equal to 0.5 percent of the connectors in a process unit are determined to be leaking during any one of the semi-annual or annual monitoring events then the frequency of monitoring shall be returned to a quarterly basis.
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Enhanced connector monitoring requirements to the most stringent leak detection and repair (LDAR) regulation applicable to affected equipment/process units. The following identifies LDAR requirements for affected equipment/process units which have been determined to representative of BACT: i. 40 CFR Part 63 Subpart UU as applicable to the ethylene manufacturing process with enhanced connector monitoring; ii. 40 CFR Part 60 Subpart VVa as applicable to the polyethylene manufacturing process with enhanced connector monitoring; The LDAR programs indicated above which are representative of BACT shall implement the following enhanced connector monitoring requirements: i. connector monitoring subsequent to the initial monitoring required shall be performed on a quarterly basis; ii. if following the initial four (4) consecutive quarters, the percent leaking connectors in a process unit is less than 0.5 percent during the most recent quarterly monitoring event, then the frequency of connector monitoring can be reduced to semi-annual; iii. if following two (2) consecutive semi-annual periods, the percent leaking connectors in a process unit is less than 0.5 percent during the most recent semi-annual monitoring event, then the frequency of connector monitoring can be reduced to annual. iv. If more than or equal to 0.5 percent of the connectors in a process unit are determined to be leaking during any one of the semi-annual or annual monitoring events then the frequency of monitoring shall be returned to a quarterly basis.

POLLUTANT NAME:	Carbon Dioxide Equivalent (CO2e)
CAS Number:	CO2e
Test Method:	Unspecified
Pollutant Group(s):	(Greenhouse Gasses (GHG))
Emission Limit 1:	35.0000 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Emission Limit 2:	

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) i. an LDAR program for leaks of methane from equipment and piping components in tail gas (fuel gas) and natural gas service. The LDAR program will involve sensory monitoring methods for leaks; ii. methane contained in leaks associated with fugitive VOCs will be minimized by the implementation of BACT for fugitive leaks of VOC.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: CO2e emissions from leaks of methane from equipment and piping components in tail gas (fuel gas) and natural gas service at the entire facility shall not exceed 35 tons per rolling 12-month period.

Process/Pollutant Information

PROCESS NAME: Light and Heavy Pygas Railcar Loading (J001)

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 0

Process Notes: Loading of railcars (2 loading arms) with light and heavy pygas controlled by the OSBL thermal oxidizer (P001 or P002).

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method:	(A) Thermal oxidizer (TO) achieving a destruction efficiency of >99.5%. The TO controlling heavy and light pygas railcar loading operations is permitted as a separate and individual emissions unit (emissions unit P001 or P002). For efficient permitting structure, the applicable operational restrictions, monitoring, record keeping, reporting, and testing associated with TO control are contained within the requirements of emissions unit P001 and P002. A separate emissions unit (P807) associated with fugitive leaks of VOC, HAP*, VHAP/Benzene*, and GHGs* from all component equipment at the facility subject to the leak control and repair regulations above has been established. For efficient permitting structure, the applicable requirements (limitations, operational restrictions, monitoring, record keeping, reporting, and testing) associated with equipment leak control and repair for VOC, HAP*, VHAP/Benzene*, and GHGs* are contained within the requirements of emissions unit P807.
Est. % Efficiency:	99.500
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	The TO controlling heavy and light pygas railcar loading operations is permitted as a separate and individual emissions unit (emissions unit P001 or P002). For efficient permitting structure, the applicable operational restrictions, monitoring, record keeping, reporting, and testing associated with TO control are contained within the requirements of emissions unit P001 and P002. A separate emissions unit (P807) associated with fugitive leaks of VOC, HAP*, VHAP/Benzene*, and GHGs* from all component equipment at the facility subject to the leak control and repair regulations above has been established. For efficient permitting structure, the applicable requirements (limitations, operational restrictions, monitoring, record keeping, reporting, and testing) associated with equipment leak control and repair for VOC, HAP*, VHAP/Benzene*, and GHGs* are contained within the requirements of emissions unit P807.

Process/Pollutant Information

PROCESS NAME:	HDPE Railcar Loading 1 (P901)
Process Type:	64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))
Primary Fuel:	
Throughput:	0
Process Notes:	Railcar loading of high-density polyethylene (HDPE) pellets controlled with baghouse

POLLUTANT NAME:	Particulate matter, total < 10 μ (TPM10)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	SEE NOTES.
Emission Limit 2:	
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.002 gr/dscf for PE Railcar Loading Bin (PE1-21), PE Railcar Loading Bin (PE2-21), PE Railcar Loading (PE1-22), and PE Railcar Loading (PE2-22). Fabric filtration at 0.001 gr/dscf for the pellet cleaning package vent (PE-RPC).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PE Railcar Loading Bin (PE1-21): 0.002 gr/dscf, 0.018 lb/hr and 0.081ton per rolling 12-month period. PE Railcar Loading Bin (PE2-21): 0.002 gr/dscf, 0.018 lb/hr and 0.081 ton per rolling 12-month period. PE Railcar Loading (PE1-22): 0.002 gr/dscf, 0.0002 lb/hr and 0.0009 ton per rolling 12-month period. PE Railcar Loading (PE2-22): 0.002 gr/dscf, 0.0002 lb/hr and 0.0009 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE1-20): 0.002 gr/dscf, 0.018 lb/hr and 0.081 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE2-20): 0.002 gr/dscf, 0.018 lb/hr and 0.081 ton per rolling 12-month period. Pellet cleaning package vent (PE-RPC): 0.001 gr/dscf, 0.009 lb/hr and 0.038 ton per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.002 gr/dscf for PE Railcar Loading Bin (PE1-21), PE Railcar Loading Bin (PE2-21), PE Railcar Loading (PE1-22), and PE Railcar Loading (PE2-22). Fabric filtration at 0.0005 gr/dscf for the pellet cleaning package vent (PE-RPC).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PE Railcar Loading Bin (PE1-21): 0.002 gr/dscf, 0.018 lb/hr and 0.081ton per rolling 12-month period. PE Railcar Loading Bin (PE2-21): 0.002 gr/dscf, 0.018 lb/hr and 0.081 ton per rolling 12-month period. PE Railcar Loading (PE1-22): 0.002 gr/dscf, 0.0002 lb/hr and 0.0009 ton per rolling 12-month period. PE Railcar Loading (PE2-22): 0.002 gr/dscf, 0.0002 lb/hr and 0.0009 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE1-20): 0.002 gr/dscf, 0.018 lb/hr and 0.081 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE2-20): 0.002 gr/dscf, 0.018 lb/hr and 0.081 ton per rolling 12-month period. Pellet cleaning package vent (PE-RPC): 0.0005 gr/dscf, 0.004 lb/hr and 0.019 ton per rolling 12-month period.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: 5.0000 % OPACITY AS A 6 MINUTE AVERAGE.

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.002 gr/dscf for PE Railcar Loading Bin (PE1-21), PE Railcar Loading Bin (PE2-21), PE Railcar Loading (PE1-22), and PE Railcar Loading (PE2-22). Fabric filtration at 0.001 gr PM10/dscf for the pellet cleaning package vent (PE-RPC).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: HDPE Railcar Loading 2 (P902)

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 0

Process Notes: Railcar loading of linear low-density polyethylene/high density polyethylene (LLDPE/HDPE) pellets controlled with baghouse. Loading operations include pellet cleaning package process.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.002 gr/dscf for PE Railcar Loading Bin (PE3-17), PE Railcar Loading Bin (PE4-17), PE Railcar Loading (PE3-18), and PE Railcar Loading (PE4-18). Fabric filtration at 0.001 gr/dscf for the pellet cleaning package vent (PE-RPC).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PE Railcar Loading Bin (PE3-17): 0.002 gr/dscf, 0.024 lb/hr and 0.0104 ton per rolling 12-month period. PE Railcar Loading Bin (PE4-17): 0.002 gr/dscf, 0.024 lb/hr and 0.104 ton per rolling 12-month period. PE Railcar Loading (PE3-18): 0.002 gr/dscf, 0.0003 lb/hr and 0.0013 ton per rolling 12-month period. PE Railcar Loading (PE4-18): 0.002 gr/dscf, 0.003 lb/hr and 0.0013 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE3-16): 0.002 gr/dscf, 0.024 lb/hr and 0.104 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE4-16): 0.002 gr/dscf, 0.024 lb/hr and 0.104 ton per rolling 12-month period. Pellet cleaning package vent (PE-RPC): 0.001 gr/dscf, 0.009 lb/hr and 0.038 ton per rolling 12-month period.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTES.

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.002 gr/dscf for PE Railcar Loading Bin (PE3-17), PE Railcar Loading Bin (PE4-17), PE Railcar Loading (PE3-18), and PE Railcar Loading (PE4-18). Fabric filtration at 0.0005 gr/dscf for the pellet cleaning package vent (PE-RPC).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PE Railcar Loading Bin (PE3-17): 0.002 gr/dscf, 0.024 lb/hr and 0.0104 ton per rolling 12-month period. PE Railcar Loading Bin (PE4-17): 0.002 gr/dscf, 0.024 lb/hr and 0.104 ton per rolling 12-month period. PE Railcar Loading (PE3-18): 0.002 gr/dscf, 0.0003 lb/hr and 0.0013 ton per rolling 12-month period. PE Railcar Loading (PE4-18): 0.002 gr/dscf, 0.003 lb/hr and 0.0013 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE3-16): 0.002 gr/dscf, 0.024 lb/hr and 0.104 ton per rolling 12-month period. PE Pellet Elutricator & Cyclone Separator (PE4-16): 0.002 gr/dscf, 0.024 lb/hr and 0.104 ton per rolling 12-month period. Pellet cleaning package vent (PE-RPC): 0.0005 gr/dscf, 0.004 lb/hr and 0.019 ton per rolling 12-month period.

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: 5.0000 % OPACITY AS A 6 MINUTE AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fabric filtration at 0.002 gr/dscf for PE Railcar Loading Bin (PE3-17), PE Railcar Loading Bin (PE4-17), PE Railcar Loading (PE3-18), and PE Railcar Loading (PE4-18). Fabric filtration at 0.001 gr PM10/dscf for the pellet cleaning package vent (PE-RPC).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Facility Roadways (F001)

Process Type: 99.140 (Paved Roads)

Primary Fuel:

Throughput: 182865.00 MI/YR

Process Notes: Facility roadways and parking areas; maximum of 182,865 annual vehicle miles traveled

POLLUTANT NAME: Particulate matter, fugitive

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1: 1.8800 T/YR PER ROLLING 12 MONTH PERIOD

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) i. Pave all in-plant haul roads and parking areas; ii. Implement best management practices including posting and limiting vehicle speeds to 20 miles per hour and water spraying or sweeping as needed based on the daily inspections conducted

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3800 T/YR PER ROLLING 12 MONTH PERIOD

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) i. Pave all in-plant haul roads and parking areas; ii. Implement best management practices including posting and limiting vehicle speeds to 20 miles per hour and water spraying or sweeping as needed based on the daily inspections conducted

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0900 T/YR PER ROLLING 12 MONTH PERIOD

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) i. Pave all in-plant haul roads and parking areas; ii. Implement best management practices including posting and limiting vehicle speeds to 20 miles per hour and water spraying or sweeping as needed based on the daily inspections conducted

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) i. Pave all in-plant haul roads and parking areas; ii. Implement best management practices including posting and limiting vehicle speeds to 20 miles per hour and water spraying or sweeping as needed based on the daily inspections conducted

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: No visible particulate emissions from any paved roadway or parking area except for a period of time not to exceed one minute during any 60-minute observation period.

Process/Pollutant Information

PROCESS NAME: Firewater Pumps (P005 and P006)

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel fuel

Throughput: 402.00 HP

Process Notes: Two identical Firewater Pumps 1 and 2; 300 kW (402 HP) emergency diesel-fired firewater pump engine. Limits are for single pump except as noted.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 2.6400 LB/H SEE NOTES.

Emission Limit 2: 0.1300 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: 3.0000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 4.0 g/kW-hour (3.0 g/HP-hour), 2.64 pounds per hour and 0.13 ton per rolling, 12-month period.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.6400 LB/H SEE NOTES.

Emission Limit 2: 0.1300 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: 3.0000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 4.0 g/kW-hour (3.0 g/HP-hour), 2.64 pounds per hour and 0.13 ton per rolling, 12-month period.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 2.3100 LB/H

Emission Limit 2: 0.1200 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 2.6000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1300 LB/H

Emission Limit 2: 0.0066 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1300 LB/H

Emission Limit 2: 0.0066 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1300 LB/H

Emission Limit 2: 0.0066 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 23.0000 T/YR PER ROLLING 12 MONTH PERIOD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operating practices (proper maintenance and operation)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1:
Emission Limit 2:
Standard Emission: 20.0000 % OPACITY AS A 6 MINUTE AVERAGE. SEE NOTE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: N/A
Other Applicable Requirements: SIP
Control Method: (P) Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturer's operating manual
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 20 percent opacity as a 6-minute average, except as specified by rule.

Process/Pollutant Information

PROCESS NAME: Emergency Diesel-fired Generator Engine (P007)

Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel fuel

Throughput: 3353.00 HP

Process Notes: 2,500 kW (3,353 HP) emergency diesel-fired generator engine

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 37.4100 LB/H SEE NOTES.

Emission Limit 2: 1.8700 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: 4.8000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 37.41 pounds per hour and 1.87 tons per rolling, 12-month period.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 37.4100 LB/H SEE NOTES.

Emission Limit 2: 1.8700 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: 4.8000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 37.41 pounds per hour and 1.87 tons per rolling, 12-month period.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 19.2500 LB/H

Emission Limit 2: 0.9600 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 2.6000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.1000 LB/H

Emission Limit 2: 0.0550 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.1000 LB/H

Emission Limit 2: 0.0550 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.1000 LB/H

Emission Limit 2: 0.0550 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.0150 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1:

Emission Limit 2:

Standard Emission: SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 20 percent during the acceleration mode; 15 percent during the lugging mode; and 50 percent during the peaks in either the acceleration or lugging modes.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 200.0000 T/YR PER ROLLING 12 MONTH PERIOD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operating practices (proper maintenance and operation)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: 1,000 kW Emergency Generators (P008 - P010)
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: Diesel fuel
Throughput: 1341.00 HP
Process Notes: Three identical ECU Generators 1 to 3; 1,000 kW (1,341 HP) emergency diesel-fired generator engine. Limits are for single generator except as noted.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 14.9600 LB/H SEE NOTES.
Emission Limit 2: 0.7500 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.
Standard Emission: 4.8000 G/BHP-H SEE NOTES
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 14.96 pounds per hour and 0.75 ton per rolling, 12-month period.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 14.9600 LB/H SEE NOTES.

Emission Limit 2: 0.7500 T/YR PER ROLLING 12 MONTH PERIOD. SEE NOTES.

Standard Emission: 4.8000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 14.96 pounds per hour and 0.75 ton per rolling, 12-month period.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 7.7000 LB/H

Emission Limit 2: 0.3900 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 2.6000 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.4400 LB/H

Emission Limit 2: 0.0220 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.4400 LB/H

Emission Limit 2: 0.0220 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.4400 LB/H

Emission Limit 2: 0.0220 T/YR PER ROLLING 12 MONTH PERIOD

Standard Emission: 0.1500 G/BHP-H SEE NOTES

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):
Emission Limit 1:
Emission Limit 2:
Standard Emission: SEE NOTES
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturer's operating manual
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 20 percent during the acceleration mode; 15 percent during the lugging mode; and 50 percent during the peaks in either the acceleration or lugging modes.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 80.0000 T/YR PER ROLLING 12 MONTH PERIOD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operating practices (proper maintenance and operation)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Cooling Tower (P011)

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 13.88 MMGAL/H

Process Notes: Multi-cell, induced-draft, counter-flow evaporative cooling tower with side stream filtration system and high efficiency mist/drift eliminator.

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 5.0700 T/YR PER ROLLING 12 MONTH PERIOD

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) High efficiency drift eliminator designed to achieve a 0.0005% drift rate and maintenance of a total dissolved solids (TDS) content not to exceed 2,000 ppm in the circulating cooling water based on a rolling 12-month average.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 3.2200 T/YR PER ROLLING 12 MONTH PERIOD

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) High efficiency drift eliminator designed to achieve a 0.0005% drift rate and maintenance of a total dissolved solids (TDS) content not to exceed 2,000 ppm in the circulating cooling water based on a rolling 12-month average.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0100 T/YR PER ROLLING 12 MONTH PERIOD

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) High efficiency drift eliminator designed to achieve a 0.0005% drift rate and maintenance of a total dissolved solids (TDS) content not to exceed 2,000 ppm in the circulating cooling water based on a rolling 12-month average.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 42.5500 T/YR PER ROLLING 12 MONTH PERIOD

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	MACT
Control Method:	(P) (a) VOC content in cooling water shall not exceed a concentration of 0.7 lb/MMgal; (b) Compliance with heat exchange leak monitoring and repair requirements for affected ethylene manufacturing process units contained in 40 CFR Part 63 Subpart XX
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	

Facility Information

RBLC ID:	TX-0838 (draft)	**Date Determination Last Updated:**	11/04/2019
Corporate/Company Name:	EXXONMOBIL OIL CORPORATION	**Permit Number:**	PSDTX843M2, PSDTX860M2, GHGPSD
Facility Name:	BEAUMONT CHEMICAL PLANT	**Permit Date:**	06/13/2018 (actual)
Facility Contact:	MARC RAIMBAULT 409-240-7046	**FRS Number:**	110000464131
Facility Description:	Increase in supplemental natural gas to two flares in a cap, 3 other flares, with attendant increase in fugitive and MSS emissions from associated piping.	**SIC Code:**	2869
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	325110
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	JEFFERSON		
Facility State:	TX		
Facility ZIP Code:			
Permit Issued By:	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (Agency Name) MICHAEL PARTEE(Agency Contact) (512) 239-3312 michael.partee@tceq.texas.gov		
Other Agency Contact Info:	Mr. Joe Janecka, P.E., (512) 239-1541, Joseph.Janecka@tceq.texas.gov		

Permit Notes:

Affected Boundaries:	Boundary Type:	Class 1 Area State:	Boundary:	Distance:
	CLASS1	AR	Caney Creek	> 250 km

Process/Pollutant Information

PROCESS NAME: High and Low Pressure Flare cap

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NSPS YY

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: MACT YY

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UDEX FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: PARAXYLENE FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: C & S FLARE

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Meet the design and operating requirements of 40 CFR §60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: fugitives

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) 28MID LDAR

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) 28MID LDAR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID: TX-0815 (final)
Date Determination Last Updated: 11/16/2017
Corporate/Company Name: TOTAL PETROCHEMICALS & REFINING USA, INC.
Permit Number: 122353, PSDTX1426, GHGPSDTX114
Facility Name: PORT ARTHUR ETHANE SIDE CRACKER
Permit Date: 01/17/2017 (actual)
Facility Contact: DOROTHY BARTOL (409) 963-6800
FRS Number: Not Found
Facility Description: Ethylene Production
SIC Code: 2869
Permit Type: B: Add new process to existing facility
NAICS Code: 325110
Permit URL:
EPA Region: 6
COUNTRY: USA
Facility County: JEFFERSON
Facility State: TX
Facility ZIP Code:
Permit Issued By: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (Agency Name)
MICHAEL PARTEE(Agency Contact) (512) 239-3312 michael.partee@tceq.texas.gov
Other Agency Contact Info: Mr. Daniel Guthrie, (512) 239-1319, Daniel.Guthrie@tceq.texas.gov
Permit Notes:

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	LA	Breton	> 250 km

Process/Pollutant Information

PROCESS NAME: Pyrolysis Furnaces

Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: NATURAL GAS

Throughput: 1000.00 kT / YR

Process Notes: 7 furnaces

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 24.6800 T/YR

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NSPS RRR

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0100 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP

Control Method: (A) Low NOx burners with selective catalytic reduction

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 461.7000 T/YR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 30.8000 T/YR ROUTINE
Emission Limit 2: 1.9600 T/YR MSS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) Routine Operations - Good Combustion Practices, Firing Gaseous Fuel MSS-cyclones

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: High Pressure Process Vents
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , SIP
Control Method: (A) Multi-Point Ground Flare. Applicant will obtain an AMOC and AMEL prior to startup of the MPGF
Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 99% - 2 carbons or less, 98%– 3 carbons or more Emission rate of 158.09 tpy is the sum of 59.93 tpy VOC for routine operations and 98.16 tpy for MSS operations. NSPS NNN, RRR MACT YY SIP (115 Subchapter B)

Process/Pollutant Information

PROCESS NAME: Low Pressure Process Vents

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , SIP

Control Method: (A) Thermal Oxidizer

Est. % Efficiency: 99.900

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NSPS NNN, RRR MACT YY SIP 115 Subchapter B

Process/Pollutant Information

PROCESS NAME: Multi Point Ground Flare

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: NATURAL GAS

Throughput: 0

Process Notes: Applicant will obtain an AMOC and AMEL prior to startup of the MPGF

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 94.2700 T/YR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Good Combustion Practices & Design
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Emission rate of 94.27 tpy is the sum of 35.86 tpy NOx for routine operations and 58.41 tpy NOx for MSS operations.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 375.4600 T/YR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) .Good Combustion Practices & Design
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Emission rate of 375.46 tpy is the sum of 142.82 tpy CO for routine operations and 232.64 tpy CO for MSS operations.

Process/Pollutant Information

PROCESS NAME: Thermal Oxidizer

Process Type: 19.200 (Emission Control Afterburners & Incinerators (combustion gasses only))

Primary Fuel: NATURAL GAS

Throughput: 0

Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 3.0000 T/YR

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Good Combustion Practices and Design

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 1.9000 T/YR

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Good Combustion Practices and Design

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 T/YR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Good Combustion Practices and Design
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: STORAGE TANKS
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 0
Process Notes: Slop oil/wastewater/sludge fixed roof tanks routed a thermal oxidizer

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP , MACT , SIP
Control Method: (A) THERMAL OXIDIZER
Est. % Efficiency: 99.900
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NSPS Kb NESHAP FF MACT YY, EEEE SIP 115 Subchapter B

Process/Pollutant Information

PROCESS NAME: Cooling Tower
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 27.9500 T/YR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT
Control Method: (P) cooling water VOC concentration NON CONTACT
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: MACT XX

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Drift Eliminators
Est. % Efficiency: 99.999
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVES
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 17.2000 T/YR

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NESHAP , MACT , SIP

Control Method: (P) 28VHP LDAR Program

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NSPS VVa, NESHAP J,V,FF, MACT UU, YY, SIP(115 Subchapter D

Facility Information

RBLC ID: LA-0323 (final)

Date Determination Last Updated: 05/11/2018

Corporate/Company Name: MONSANTO COMPANY

Permit Number: PSD-LA-890

Facility Name: MONSANTO LULING PLANT

Permit Date: 01/09/2017 (actual)

Facility Contact: ENRIQUE WEHLEN 9857858211 ENRIGUE.WEHLEN@MONSANTO.COM

FRS Number: 110067118274

Facility Description: Chemical Manufacture

SIC Code: 2879

Permit Type: D: Both B (Add new process to existing facility) &C (Modify process at existing facility)

NAICS Code: 325320

Permit URL: http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=10460194&ob=yes

EPA Region: 6

COUNTRY: USA

Facility County: ST. CHARLES PARISH

Facility State: LA

Facility ZIP Code: 70070

Permit Issued By: LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name)
MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV

Permit Notes: Dicamba Manufacturing Facility expansion project.

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	LA	Breton	100km - 50km

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	118.3000 (Tons/Year)

Nitrogen Oxides (NOx)	84.2400 (Tons/Year)
Particulate Matter (PM)	20.8600 (Tons/Year)
Sulfur Oxides (SOx)	1.6100 (Tons/Year)
Volatile Organic Compounds (VOC)	39.4900 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: No. 9 Boiler - Natural Gas Fired

Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: Natural Gas

Throughput: 325.00 MMBTU/h

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0075 LB/MMBTU ANNUAL AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) Good combustion practices and Boiler MACT

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Method 201A

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0075 LB/MMBTU ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP , NSPS
Control Method: (P) Good combustion practices and Boiler MACT
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0350 LB/MMBTU ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (A) Ultra Low NOx Burners
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0450 LB/MMBTU ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) Good combustion practices and Boiler MACT
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 0.1670 LB/LB ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) Good combustion practices and energy efficient operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Units are lb of CO2e/lb of steam generated.

Process/Pollutant Information

PROCESS NAME: No. 10 Boiler - Natural Gas Fired
Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: Natural Gas

Throughput: 325.00 MMBTU/h

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201A and OTM 28

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0075 LB/MMBTU ANNUAL AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) Good combustion practices and Boiler MACT

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Method 201A

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0075 LB/MMBTU ANNUAL AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) Good combustion practices and Boiler MACT

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0350 LB/MMBTU ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (A) Ultra Low NOx Burners
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0450 LB/MMBTU ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) Good combustion practices and Boiler MACT
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 0.1670 LB/LB ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) Good combustion practices and energy efficient operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Units are lb of CO2e/lb of steam generated.

Process/Pollutant Information

PROCESS NAME: Cooling Water Tower
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 18000.00 gal/m
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0030 %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (A) Drift Eliminators with Draft Factor of 0.003%
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Drift Eliminators with Drift Factor of 0.003%

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (A) Drift Eliminators with Drift Factor of 0.003%
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Drift Eliminators with Drift Factor of 0.003%

Process/Pollutant Information

PROCESS NAME: Emergency Flare
Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: Natural Gas

Throughput: 0.40 mmbtu/h

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NESHAP

Control Method: (P) Proper design and operation

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NESHAP

Control Method: (P) Proper design and operation

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) Proper design and operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) Proper design and operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) Proper design and operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Thermal Oxidizer with Caustic Scrubber
Process Type: 19.900 (Other Misc. Combustion)
Primary Fuel:
Throughput: 33.50 mmbtu/h
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (B) Good combustion practices, Compliance with applicable NESHAP, and Caustic Scrubber.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (B) Good combustion practices, Compliance with applicable NESHAP, and Caustic Scrubber.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (B) Good combustion practices, Compliance with applicable NESHAP, and Caustic Scrubber.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (B) Good combustion practices, Compliance with applicable NESHAP, and Caustic Scrubber.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) Good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fire Water Diesel Pump No. 3 Engine
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: Diesel Fuel
Throughput: 600.00 hp
Process Notes: Emergency engine with a limit of 100 hours/yr on operating hours for ready testing.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fire Water Diesel Pump No. 4 Engine

Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel Fuel

Throughput: 600.00 hp

Process Notes: Emergency Engine limited to 100 hours/yr for ready tests

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Standby Generator No. 9 Engine

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel Fuel

Throughput: 400.00 hp

Process Notes: Operating hours limited to 100 hours/yr for ready testing.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Process Baghouse Dust Collector Filter

Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 700.00 cfm

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0003 GR/DSCF

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Baghouse Dust Collector Filter

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0003 GR/DSCF

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Baghouse Dust Collector Filter

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 1 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 2 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 3 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0020 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 4 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:

Throughput: 12000.00 cfm

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 5 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Baghouse Dust Collector Filter

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 6 Baghouse Dust Collector

Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 12000.00 cfm

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0002 GR/DSCF

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Baghouse Dust Collector Filter

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 7 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 8 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 9 Baghouse Dust Collector

Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 12000.00 cfm

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0002 GR/DSCF

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Baghouse Dust Collector Filter

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0002 GR/DSCF

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 10 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 11 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 12 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 13 Baghouse Dust Collector

Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 12000.00 cfm

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0002 GR/DSCF

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Baghouse Dust Collector Filter

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0002 GR/DSCF

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 14 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Building Vent 15 Baghouse Dust Collector
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 12000.00 cfm
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0002 GR/DSCF
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Baghouse Dust Collector Filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID: LA-0317 (final)
Date Determination Last Updated: 04/28/2017
Corporate/Company Name: METHANEX USA, LLC
Permit Number: PSD-LA-761(M4)
Facility Name: METHANEX - GEISMAR METHANOL PLANT
Permit Date: 12/22/2016 (actual)
Facility Contact: GLYNN FONTENOT 225-402-0301 GFONTENOT@METHANEX.COM
FRS Number: 110046528227
Facility Description: methanol plant (Unit I and Unit II) to produce 6000 metric tons of methanol by steam reforming natural gas
SIC Code: 2869
Permit Type: A: New/Greenfield Facility
NAICS Code: 325199

Permit URL:

EPA Region: 6 **COUNTRY:** USA

Facility County: ASCENSION

Facility State: LA

Facility ZIP Code: 70734

Permit Issued By: LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name)
MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV

Other Agency Contact Info: permit writer: Dr. Qingming Zhang (225)-219-3457

Permit Notes: psd-la-761, issued 11/07/12, for relocation Unit I (3000 mt/yr) from punta arenas (chile); psd-la-761(M1), issued 07/12/13, for relocation Unit II (3000 mt/yr); psd-la-761(M2) (issued 01/15/16), psd-la-761(M3) (issued 01/14/16), and psd-la-761(M4) (issued 12/22/16) are for miscellaneous reconciliation

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	175.2200 (Tons/Year)
Nitrogen Oxides (NOx)	178.7000 (Tons/Year)
Particulate Matter (PM)	137.1900 (Tons/Year)
Sulfur Oxides (SOx)	10.5600 (Tons/Year)
Volatile Organic Compounds (VOC)	68.4000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: Steam methane reformers (I-H-101, II-H-101)

Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: natural gas

Throughput: 2364.00 mm btu/hr

Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: EPA/OAR Cond. Test Mthd 022

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0070 LB/MM BTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (A) SCR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) proper burner design and operations
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) proper burner design and operations
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) proper burner design and operations
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) Energy efficiency measures with the installation of heat recovery steam generators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: flares (I-X-703, II-X-703)
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: natural gas
Throughput: 3723.00 mm btu/hr
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 63.11
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63.11
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63.11
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63.11
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63.11
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Emergency Generator Engines (4 units)

Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel

Throughput: 0

Process Notes: I-GDE-1201, II-GDE-1201 = 2346 hp I-GDE-1202 = 755 hp I-GDE-1203 = 1193 hp

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Firewater pump Engines (4 units)
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: diesel
Throughput: 896.00 hp (each)
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e

Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , NESHAP
Control Method: (P) complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)

Process/Pollutant Information

PROCESS NAME: Compressor Vents (I-C-601, II-C-601)
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel:
Throughput: 11820.00 kg/hr
Process Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) proper equipment design, good operating and maintenance practices

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) energy efficiency measures
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: cooling towers (I-CT-621, II-CT-621)
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 66000.00 gpm (each)
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0010 % DRIFT RATE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Drift eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0010 % DIRFT RATE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) drift eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: wastewater treatment plant (I-X-922)

Process Type: 22.200 (Industrial Wastewater Treatment)

Primary Fuel:

Throughput: 750000.00 gallons/day

Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Energy efficiency measures

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Process Fugitives (I-G-1000, II-G-1000)

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 Subpart H
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID: LA-0314 (final)
Date Determination Last Updated: 04/28/2017
Corporate/Company Name: INDORAMA VENTURES OLEFINS, LLC
Permit Number: PSD-LA-813
Facility Name: INDORAMA LAKE CHARLES FACILITY
Permit Date: 08/03/2016 (actual)
Facility Contact: SUSAN WEDEMEYER 337-476-7451 SUSAN.WEDEMEYER@US.INDORAMA.NET
FRS Number: 110000748040
Facility Description: modify and restart-up a mothballed facility to produce 1,009 million lbs/yr of ethylene
SIC Code: 2869
Permit Type: C: Modify process at existing facility
NAICS Code: 325199
Permit URL:
EPA Region: 6
COUNTRY: USA
Facility County: CALCASIEU
Facility State: LA
Facility ZIP Code: 70669
Permit Issued By: LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name)
MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV
Other Agency Contact Info: Permit Writer: Dan Nguyen (225)219-3395
Permit Notes:

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	LA	Breton	> 250 km

Facility-wide Emissions:	Pollutant Name:	Facility-wide Emissions Increase:
	Carbon Monoxide	432.0000 (Tons/Year)
	Nitrogen Oxides (NOx)	303.0000 (Tons/Year)
	Particulate Matter (PM)	60.0000 (Tons/Year)
	Sulfur Oxides (SOx)	20.0000 (Tons/Year)
	Volatile Organic Compounds (VOC)	189.0000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: Modular Ethylene Cracking Furnaces - 001

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel: natural gas/fuel gas

Throughput: 1028.00 MM BTU/hr

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0100 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) good combustion practices; fueled by natural gas or process fuel gas; LNB + SCR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0400 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance; gaseous fuels; economizers & Insulation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Ethylene Cracking Furnace - 015
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel: natural gas/fuel gas
Throughput: 168.00 mm btu
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, fueled by natural gas and/or fuel gas
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices, fueled by natural gas and/or fuel gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0980 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) LNB, good combustion practices, fueled by natural gas and/or fuel gas
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0400 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance; gaseous fuels; economizers & insulation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Dryer Regenerator Heater - 005
Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)
Primary Fuel: process fuel gas
Throughput: 29.00 mm btu/hr
Process Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0820 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance; gaseous fuels; Insulation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; fueled by process fuel gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; fueled by process fuel gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0600 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; ULNB
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: boiler A and B (010 and 011)
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: natural gas/fuel gas

Throughput: 248.00 mm btu/hr (each)

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0600 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas; ULNB (FGR and economizer)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0820 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance; gaseous fuels; economizers & Insulation; combustion air preheating; condensate return system
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: boiler B-201
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: natural gas/fuel gas
Throughput: 229.00 mm btu
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0600 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices; fueled by natural gas or process fuel gas; ULNB (FGR and economizer)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0370 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices and proper operation and maintenance; gaseous fuels; economizers & Insulation; combustion air preheating; condensate return system
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Flare No. 1 - 008
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: natural gas
Throughput: 85097.00 MM BTU/yr
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices); steam assisted
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices); steam assisted
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MM BTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS

Control Method: (P) complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.3100 LB/MM BTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (P) complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 98.0000 % REMOVAL EFFICIENCY

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS
Control Method: (P) complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good management practices, good combustion practices, proper flare design
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Pyrolysis Gasoline Tank Flare - 009
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: natural gas
Throughput: 0.66 mm btu/hr
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0070 LB/MM BTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) complying with 40 CFR 60.18 and 63.11; good combustion practices (including establishment of flare minimization practices); steam assisted

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0070 LBS/MM BTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) complying with 40 CFR 60.18 and 63.11; good combustion practices (including establishment of flare minimization practices); steam assisted

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0680 LB/MM BTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NESHAP , NSPS

Control Method: (P) complying with 40 CFR 60.18 and 63.11; good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.3100 LB/MM BTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) complying with 40 CFR 60.18 and 63.11; good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 98.0000 % REMOVAL EFFICIENCY

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NESHAP

Control Method: (P) complying with 40 CFR 60.18 and 63.11; good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good management practices, good combustion practices, proper flare design

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: vessel evacuation flare - 018
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: natural gas
Throughput: 3.04 mm btu/hr
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices (including establishment of flare minimization practices)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0070 LB/MM BTU THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0680 LB/MM BTU THREE ONE-HOUR TEST AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.3100 LBS/MM BTU THREE ONE-HOUR TEST AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 98.0000 % REMOVAL EFFICIENCY

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices (including establishment of flare minimization practices)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Insulation, Gaseous fuels, good combustion practices, and proper operation and maintenance

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Diesel Firewater pump engines (6 units)

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: diesel

Throughput: 425.00 hp

Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Diesel emergency generator engine - EGEN
Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: diesel
Throughput: 350.00 hp
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) complying with 40 CFR 63 subpart ZZZZ
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: cooling towers - 007
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 86500.00 gpm

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT RATE
Emission Limit 2: 1400.0000 PPM TDS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) drift eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT RATE
Emission Limit 2: 1400.0000 PPM TDS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) drift eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) monitored as required by 40 CFR 63 subpart XX
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: oil tank FA-712 - 012
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 66150.00 gal
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) IFR with liquid mounted seal, double seal, or mechanical seal
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: storm water surge tank TK-9 - 013
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 291410.00 gallons
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) fixed roof
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: process water storage tanks TK-301A/B - 017

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 350000.00 gallons

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NESHAP

Control Method: (P) EFR with primary and secondary seal, submerged fill pipe, and complying with 40 CFR 63 Subpart WW

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Unleaded Gasoline Tank TK-33

Process Type: 42.005 (Petroleum Liquid Storage in Fixed Roof Tanks)

Primary Fuel:

Throughput: 1000.00 gallons

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Submerged fill pipe and LAC 33:III.2103
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Methanol Tank TK-2
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 1469.00 gallons
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) Submerged fill pipe and LAC 33:III.2103
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: pyrolysis gasoline tank V-410
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 946996.00 gallons
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) Closed vent system and routed to a flare, Complying with 40 CFR 60 Subpart Kb and LAC 33:III.2103
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: wastewater treatment system

Process Type: 22.200 (Industrial Wastewater Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NESHAP

Control Method: (P) Complying with 40 CFR 63 Subpart XX

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fugitive Emissions

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	
Emission Limit 2:	
Standard Emission:	
Did factors, other then air pollution technology considerations influence the BACT decisions:	U
Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	NESHAP
Control Method:	(P) proper piping design, complying with LAC 33:III.2111, and conduct an LDAR meeting requirements of 40 CFR 63 Subpart UU
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	

Facility Information

RBLC ID:	LA-0295 (final)	**Date Determination Last Updated:**	09/19/2016
Corporate/Company Name:	EQUISTAR CHEMICALS, LP	**Permit Number:**	PSD-LA-806
Facility Name:	WESTLAKE FACILITY	**Permit Date:**	07/12/2016 (actual)
Facility Contact:	JOSEPH BUSH (337) 882-1615 JOE.BUSH@LYONDELLBASELL.COM	**FRS Number:**	110000597266
Facility Description:	Polypropylene manufacturing facility	**SIC Code:**	2821
Permit Type:	D: Both B (Add new process to existing facility) &C (Modify process at existing facility)	**NAICS Code:**	325211
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Other Agency Contact Info:	Permit writer: Anthony Randall, (225) 219-3417 or anthony.randall@la.gov		
Permit Notes:	Complete application date = date of administrative completeness Permit is for a retroactive PSD review.		

Process/Pollutant Information

PROCESS NAME: CGP Unit Cooling Tower (3-03, EQT 15)

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 3000.00 GPM

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.1300 LB/H HOURLY MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Monthly hydrocarbon monitoring; maintain equipment to minimize fugitive emissions; repair faulty equipment at the earliest opportunity, but no later than the next scheduled unit shutdown

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Annual VOC emissions from the CGP Unit Cooling Tower, along with VOC emissions from a number of other cooling towers not addressed in the PSD permit, are capped at 12.29 TPY (GRP 13).

Process/Pollutant Information

PROCESS NAME: M-Line Production Area Flare (FL061) (Z2, EQT 19)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: Flare is subject to 40 CFR 60.18 and Subpart DDD.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 8882.9200 LB/H HOURLY MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Annual VOC emissions from the Cogeneration Plant Flare (449, EQT 326); the M-Line Production Area Flare (Z2, EQT 19); and the Plant 5 Flare (Z1, EQT 138) (not addressed in the PSD permit) are limited to 465.93 TPY (GRP 12).

Process/Pollutant Information

PROCESS NAME: Reciprocating Internal Combustion Engines 1 and 2 (1-08, EQT 321 & 2-08, EQT 322)
Process Type: 17.150 (Other Gaseous)
Primary Fuel: NATURAL GAS AND VENT GAS
Throughput: 11265.00 HP
Process Notes: Engines are subject to 40 CFR 60 Subparts DDD and JJJJ.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 14.6700 LB/H HOURLY MAXIMUM
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Good combustion practices, including good equipment design, use of gaseous fuels for good mixing, and proper combustion techniques (see notes below)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Aggregate NOx emissions from the engines are capped at 103.90 TPY (GRP 10). Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 3.3500 LB/H HOURLY MAXIMUM

Emission Limit 2: 29.0000 PPMVD @ 5% O2 ANNUAL AVERAGE

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (B) Oxidation catalyst and good combustion practices, including good equipment design, use of gaseous fuels for good mixing, and proper combustion techniques (see notes below)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Aggregate VOC emissions from the engines are capped at 23.69 TPY (GRP 10). Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

Process/Pollutant Information

PROCESS NAME: Solar Titan 130 Gas Turbine with Unfired HRSG (3-08, EQT 323)

Process Type: 16.210 (Natural Gas (includes propane & liquified petroleum gas))

Primary Fuel: Natural Gas

Throughput: 159.46 MM BTU/HR

Process Notes: Turbine is subject to 40 CFR 60 Subpart KKKK. Output power at generator: 14.117 MW

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 14.2500 LB/HR HOURLY MAXIMUM

Emission Limit 2:

Standard Emission: 15.0000 PPMVD @ 15% O2 ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Dry low NOx combustor (SoLoNOx) and good combustion practices, including good equipment design, use of gaseous fuels for good mixing, and proper combustion techniques (see notes below)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: EPA/OAR Mthd 25A

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.6400 LB/H HOURLY MAXIMUM

Emission Limit 2:

Standard Emission: 2.5000 PPMVD @ 15% O2 ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices, including good equipment design, use of gaseous fuels for good mixing, and proper combustion techniques consistent with the manufacturer's recommendations to maximize fuel efficiency and minimize emissions (see notes below)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit. PSD permit requires an annual stack test for VOC. If VOC < 75% of the permit limit, the frequency of the testing may be reduced to once every 2 years. If result of any subsequent test exceeds 75% of the permit limit, resume annual testing.

Process/Pollutant Information

PROCESS NAME: Firetube Boiler Nos. 1 and 2 (4-08, EQT 324 & 5-08, EQT 325)

Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: NATURAL GAS AND VENT GAS

Throughput: 63.00 MM BTU/H

Process Notes: Boilers are subject to 40 CFR 60 Subpart Dc. Boiler No. 1 is also subject to 40 CFR 60 Subpart DDD.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: EPA/OAR Mthd 7E

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 2.7500 LB/H HOURLY MAXIMUM

Emission Limit 2: 30.0000 PPMVD @ 3% O2 ANNUAL AVERAGE

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method:	(B) Flue gas recirculation and good combustion practices, including good equipment design, use of gaseous fuels for good mixing, and proper combustion techniques (see notes below)
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Aggregate NOx emissions from the boilers are capped at 10.05 TPY (GRP 11). Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit. The PSD permit also references the 30 ppmvd @ 3% O2 limit as a "three 1-hour testing average."

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	EPA/OAR Mthd 25A
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	0.2100 LB/H HOURLY MAXIMUM
Emission Limit 2:	2.8000 PPMVD @ 3% O2 ANNUAL AVERAGE
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(B) Oxidation catalyst and good combustion practices, including good equipment design, use of gaseous fuels for good mixing, and proper combustion techniques (see notes below)
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Aggregate VOC emissions from the boilers are capped at 0.90 TPY (GRP 11). Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit. The PSD permit also references the 2.8 ppmvd @ 3% O2 limit as a "three 1-hour testing average."

Process/Pollutant Information

PROCESS NAME: Cogeneration Plant Flare (449, EQT 326)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: Flare is subject to 40 CFR 60.18 and Subpart DDD.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 165.7500 LB/H HOURLY MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Annual VOC emissions from the Cogeneration Plant Flare (449, EQT 326); the M-Line Production Area Flare (Z2, EQT 19); and the Plant 5 Flare (Z1, EQT 138) (not addressed in the PSD permit) are limited to 465.93 TPY (GRP 12).

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 12.6000 LB/H HOURLY MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Annual NOx emissions from the Cogeneration Plant Flare (449, EQT 326); the M-Line Production Area Flare (Z2, EQT 19); and the Plant 5 Flare (Z1, EQT 138) (not addressed in the PSD permit) are limited to 36.65 TPY (GRP 12).

Process/Pollutant Information

PROCESS NAME: Bulk Storage Vents (RLP 5, 9, 10, & 11)
Process Type: 69.999 (Other Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 1200.00 ACFM
Process Notes: Vents are subject to 40 CFR 60 Subpart DDD.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0100 LB/H HOURLY MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Good design and operating practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Annual VOC emissions from these vents, along with VOC emissions from a number of other vents not addressed in the PSD permit, are capped at 6.91 TPY (GRP 15).

Process/Pollutant Information

PROCESS NAME: Facility Fugitive Emissions (FUG 4)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: EPA/OAR Mthd 21

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , NSPS

Control Method: (P) Leak detection and repair (LDAR): LAC 33:III.2122

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: 40 CFR 60 Subpart DDD (referencing Subpart VV) is also applicable, but LAC 33:III.2122 is the overall most stringent program.

Facility Information

RBLC ID: LA-0305 (final)

Date Determination Last Updated: 04/28/2017

Corporate/Company Name: LAKE CHARLES METHANOL, LLC

Permit Number: PSD-LA-803(M1)

Facility Name: LAKE CHARLES METHANOL FACILITY

Permit Date: 06/30/2016 (actual)

Facility Contact: JOHN MCDANIEL 318-308-0322 JMCDANIEL@LAKECHARLESMETHANOL.COM

FRS Number: 110067180366

Facility Description:	Proposed facility to produce methanol, H2, H2SO4, CO2, Argon and electricity from Pet Coke	**SIC Code:**	2869
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325199
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU PARISH		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Other Agency Contact Info:	Dan Nguyen - (225)219-3395		
Permit Notes:	PSD-LA-803 was issued 2/24/2016. The facility has not commence construction when Permit PSD-LA-803(M1) was issued.		

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	461.2800 (Tons/Year)
Nitrogen Oxides (NOx)	168.4900 (Tons/Year)
Particulate Matter (PM)	70.3500 (Tons/Year)
Sulfur Oxides (SOx)	137.1000 (Tons/Year)
Volatile Organic Compounds (VOC)	18.4400 (Tons/Year)

Process/Pollutant Information

PROCESS NAME:	Auxiliary Boilers and Superheaters
Process Type:	11.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel:	Natural Gas
Throughput:	0
Process Notes:	Supplement fuel: fuel gas Boilers: 225 MM BTU/hr each

POLLUTANT NAME:	Carbon Dioxide Equivalent (CO2e)
CAS Number:	CO2e
Test Method:	Unspecified
Pollutant Group(s):	(Greenhouse Gasses (GHG))
Emission Limit 1:	
Emission Limit 2:	
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good equipment design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and proper operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and proper operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) fuel gases and/or pipeline quality natural gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0150 LBS/MM BTU 30 ROLLING AVG., EXCEPT SCR SU OR MAINT.
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SCR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Flares
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: Fuel Gas
Throughput: 1008.00 MM BTU/hr
Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good equipment design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good flare design
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good flare design
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good flare design
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Acid Gas Removal Unit / CO2 Vent

Process Type: 69.999 (Other Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Thermal Oxidizers

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (A) Thermal oxidizers
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Wet Sulfuric Acid Plants
Process Type: 62.015 (Sulfuric Acid Plants)
Primary Fuel:
Throughput: 904.30 tons/day (each)
Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good equipment design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SCR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.5000 LB/TON H2SO4 PROD.
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) H2O2 scrubbers
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfuric Acid (mist, vapors, etc)
CAS Number: 7664-93-9
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Particulate Matter (PM))
Emission Limit 1: 0.1500 LBS/TON H2SO4 PROD.
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Condenser, WESP, and H2O2 Scrubbers
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 LB/TON H2SO4 PROD.
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Condenser, WESP, H2O2 scrubbers
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 LB/TON H2SO4 PROD.
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Condenser, WESP, H2O2 scrubbers
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Regenerative Thermal Oxidizers

Process Type: 19.200 (Emission Control Afterburners & Incinerators (combustion gasses only))

Primary Fuel: fuel gas

Throughput: 6.00 mm btu/hr (each)

Process Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good equipment design and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good engineering design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Cooling Towers
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 0
Process Notes: Unit A = 241,843 gpm Unit B = 201,196 gpm Unit C = 72,531 gpm

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Drift eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Drift eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Coke Handling
Process Type: 99.190 (Other Fugitive Dust Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) baghouses

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF THREE ONE-HOUR TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) baghouses
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Sulfuric Acid Storage Tanks
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 68246.00 gallons
Process Notes:

POLLUTANT NAME: Sulfuric Acid (mist, vapors, etc)
CAS Number: 7664-93-9
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Fixed roofs, submerged fill pipes, and nitrogen blanket
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fugitives
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Diesel Engines (Emergency)
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: Diesel
Throughput: 4023.00 hp
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Complying with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Complying with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Complying with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Complying with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) Complying with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Complying with 40 CFR 60 Subpart IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Gasifier Start-up Preheat Burners
Process Type: 13.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: Natural gas

Throughput: 23.00 MM BTU/hr (each)

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good engineering practices, good combustion technology, and use of clean fuels

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good engineering practices, good combustion technology, and use of clean fuels

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering practices, good combustion technology, and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering practices, good combustion technology, and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering practices, good combustion technology, and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good equipment design and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: WSA Preheat Burners
Process Type: 13.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: Natural Gas
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and practices and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and practices and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and practices and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and practices and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good engineering design and practices and use of clean fuels
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good equipment design and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Facility Information

RBLC ID:	LA-0275 (final)	**Date Determination Last Updated:**	04/28/2017
Corporate/Company Name:	SASOL CHEMICALS (USA) LLC	**Permit Number:**	PSD-LA-291(M4)
Facility Name:	LINEAR ALKYL BENZENE (LAB) UNIT	**Permit Date:**	04/29/2016 (actual)
Facility Contact:	ERIC RODRIGUEZ 281-588-3761 ERIC.RODRIGUEZ@SASOL.COM	**FRS Number:**	110017418061
Facility Description:	LAB production unit, PSD-LA-291(M2) issued October 18, 1998 - PSD-LA-291(M3) issued November 29, 2010. Permit PSD-LA-291(M4) for emission limits revision, No BACT change.	**SIC Code:**	2865
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	325110
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Other Agency Contact Info:	Dan Nguyen, (225) 219-3395		
Permit Notes:			

Affected Boundaries: **Boundary Type:** **Class 1 Area State:** **Boundary:** **Distance:**

	CLASS1	LA	Breton	> 250 km

Facility-wide Emissions:	**Pollutant Name:**	**Facility-wide Emissions Increase:**
	Nitrogen Oxides (NOx)	115.9800 (Tons/Year)
	Particulate Matter (PM)	10.3300 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: Heaters (3 units)

Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: Natural Gas and Ethane

Throughput: 0

Process Notes: LH-1(H-201): 87.3 MM BTU/hr - fires CH4 & Ethane LH-2(H-202): 21.0 MM BTU/hr - fires CH4 & Ethane LH-3(H-601): 220.5 MM BTU/hr - fires CH4, Ethane, and hydrogen waste gas

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP
Control Method: (P) Low NOX burners
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: LH-1: 7.15 lbs/hr LH-2: 2.71 lbs/hr LH-3: 19.36 lbs/hr

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: LH-1: 0.86 lbs/hr LH-2: 0.21 lbs/hr LH-3: 1.67 lbs/hr

Process/Pollutant Information

PROCESS NAME: LF-1 - LAB Unit Flare
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: Natural Gas
Throughput: 0
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 10.1500 LBS/HR HOURLY MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Steam assisted
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.4000 LBS/HR HOURLY MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) steam assisted
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID: TX-0728 (final)
Date Determination Last Updated: 05/16/2016
Corporate/Company Name: BASF
Permit Number: 118239, N200
Facility Name: PEONY CHEMICAL MANUFACTURING FACILITY
Permit Date: 04/01/2015 (actual)
Facility Contact: DOUG REEVES (979) 415-8410 DOUG.REEVES@BASF.COM
FRS Number: 110056953701
Facility Description: Ammonia production with hydrogen imported
SIC Code: 2813
Permit Type: B: Add new process to existing facility
NAICS Code: 325311
Permit URL:
EPA Region: 6
COUNTRY: USA

Facility County: BRAZORIA

Facility State: TX

Facility ZIP Code:

Permit Issued By: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (Agency Name)
MICHAEL PARTEE(Agency Contact) (512) 239-3312 michael.partee@tceq.texas.gov

Other Agency Contact Info: David Infortunio 512-239-1247

Permit Notes:

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	LA	Breton	> 250 km

Process/Pollutant Information

PROCESS NAME: ammonia flare

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: Natural gas, ammonia, hydrogen

Throughput: 106396.00 MMBtu/yr

Process Notes: 4TPY ammonia throughput limit A flare is used to combust unreacted hydrogen, destroy impure hydrogen/ammonia streams, and to control process shutdowns. The Flare is claimed to achieve 99% control for ammonia. Best Available Control Technology (BACT) for carbon monoxide (CO) from flares is good combustion practices. Sulfur Dioxide (SO2) emissions are controlled with the use of pipeline quality natural gas as fuel gas. The only volatile organic compound (VOC) emitted from the flare result from using natural gas as fuel gas. As the flare is not used for control of VOC, assist gas is not needed to control emissions of particulate matter (PM). Emission rates provided are for worst case maintenance, start-up and shutdown (MSS) scenarios.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 950.4100 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements: N/A

Control Method: (P) flare good combustion practices

Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Emission rates provided are for worst-case MSS scenarios

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 223.4100 LB/H
Emission Limit 2: 5.3900 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: N/A
Control Method: (P) no control
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The TPY emission rate is based on all operating scenarios. the lb/hr rate is based on worst case MSS scenarios.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 1.0200 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: N/A
Control Method: (N)

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Emission rates provided are for worst-case MSS scenarios.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 9.3200 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: N/A
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: All VOC is from fuel gas not waste gas. Emission rates provided are for worst-case MSS scenarios.

Process/Pollutant Information

PROCESS NAME: Emergency Diesel Generator
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: Diesel
Throughput: 1500.00 hp

Process Notes: The emergency generator (EPN 17-1-4) at the site is diesel fired and rated at 1500 horsepower (hp). Lowest Achievable Emission Rates (LAER) for nitrogen oxides (NOx) is the use of a 40 Code Federal Rules (CFR) Part 89 Tier 2 engine and limited hours of operation. Emissions from the engine shall not exceed 0.0218 grams per horsepower-hour (g/hp-hr) of nitrogen oxides (NOx). The engine is limited to 52 hours per year of non-emergency operation. Emissions from the engine shall not exceed 0.01256 g/hp hr of carbon monoxide (CO). The fuel for the engine is limited to 15 parts per million sulfur by weight (ultra-low sulfur diesel). The engine is limited to 52 hours per year of non-emergency operation. Also applicable: 40CFR60 IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engine and 40CFR63 ZZZZ, National Emissions Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 LB/H
Emission Limit 2: 0.0100 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Minimized hours of operations Tier II engine
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 LB/H
Emission Limit 2: 0.0100 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Minimized hours of operations Tier II engine

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 LB/H
Emission Limit 2: 0.0100 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Minimized hours of operations Tier II engine
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0218 G/HP HR
Emission Limit 2: 0.3500 TPY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Minimized hours of operations Tier II engine

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0126 G/HP HR
Emission Limit 2: 0.2000 TPY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: NSPS , MACT
Control Method: (P) Minimized hours of operations Tier II engine
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.6100 LB/H
Emission Limit 2: 0.0200 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: N/A
Control Method: (P) Low sulfur fuel 15 ppmw

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.7000 LB/H
Emission Limit 2: 0.0200 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: N/A
Control Method: (P) Minimized hours of operations Tier II engine
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Diesel and lube oil tanks
Process Type: 42.005 (Petroleum Liquid Storage in Fixed Roof Tanks)
Primary Fuel:
Throughput: 10708.00 gallons/yr
Process Notes: The tanks are painted white. Loading is done via submerged piping. The volatile organic compound (VOC) vapor pressure of the diesel and lube oil stored is below 0.0002 pounds per square inch actual (psia), so a fixed roof is reasonable.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0200 LB/H
Emission Limit 2: 0.0100 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: NSPS
Control Method: (P) low vapor pressure fuel, submerged fill, white tank
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: VP

Process/Pollutant Information

PROCESS NAME: Cooling tower
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 40000.00 gallons per minute
Process Notes: Total dissolved solids (TDS) shall not exceed 3,500 parts per million by weight. Volatile organic compounds (VOC) is not emitted from the cooling tower as there is no VOC in the process.

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3500 LB/H
Emission Limit 2: 1.5300 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:
Control Method: (A) drift eliminator is 0.0005% efficient
Est. % Efficiency: 0.001
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3100 LB/H
Emission Limit 2: 1.0500 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements:
Control Method: (A) drift eliminator is 0.0005% efficient
Est. % Efficiency: 0.001
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1200 LB/H
Emission Limit 2: 0.4100 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: OTHER CASE-BY-CASE

Other Applicable Requirements:
Control Method: (A) drift eliminator is 0.0005% efficient
Est. % Efficiency: 0.001
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Ammonia Start-Up Heater
Process Type: 19.600 (Misc. Boilers, Furnaces, Heaters)
Primary Fuel: pipeline quality natural gas
Throughput: 8100.00 MMBtu/yr
Process Notes: Throughput also limited to 54MMBtu/hr. Given that the hours of operation are intermittent, it is unreasonable to use Selective Catalytic Reduction (SCR) on this unit due to the time it takes SCR to reach a temperature at which it controls nitrogen oxides (NOx) emissions. The startup heater achieves 0.036 pounds per million british thermal units (lb/MMBtu) for NOx. This rate is supported by the RACT/BACT/LAER Clearinghouse (RBLC) database, as well as recently issued permits in Texas and other states. California regulations require 0.011 lb. NOx/MMBtu as reasonably available control technology (RACT) (Southern California Air Quality District (SCAQMD) Rule 1146) but this is not achievable for intermittent emissions resulting from heaters being used exclusively in support of maintenance, start-up, and shutdown (MSS) activities.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 1.9600 LB/H
Emission Limit 2: 50.0000 PPMVD @ 3% O2
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements:
Control Method: (P) limited hours of operation
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 1.9100 LB/H
Emission Limit 2: 0.0360 LB/MMBTU
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements:
Control Method: (P) limited hours of operation and low NOx burners
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.4000 LB/H
Emission Limit 2: 0.0300 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements:
Control Method: (P) use of gaseous fuel
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0300 LB/H
Emission Limit 2: 0.0100 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements:
Control Method: (P) limited hours of operation and low sulfur fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.2700 LB/H
Emission Limit 2: 0.0200 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements:
Control Method: (P) use of gaseous fuel
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Lead (Pb) / Lead Compounds
CAS Number: 7439-92-1
Test Method: Unspecified
Pollutant Group(s): (Hazardous Air Pollutants (HAP) , Heavy Metals , InOrganic Compounds , Particulate Matter (PM))
Emission Limit 1: 0.0100 LB/H
Emission Limit 2: 0.0100 T/YR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: OTHER CASE-BY-CASE
Other Applicable Requirements: MACT
Control Method: (P) limited hours of operation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 40CFR63 Subpart DDDDD, National Emission Standards For Hazardous Air Pollutants For Major Sources: Industrial, Commercial, And Institutional Boilers And Process Heaters.

Facility Information

RBLC ID:	AK-0082 (final)	**Date Determination Last Updated:**	02/19/2016
Corporate/Company Name:	EXXON MOBIL CORPORATION	**Permit Number:**	AQ1201CPT03
Facility Name:	POINT THOMSON PRODUCTION FACILITY	**Permit Date:**	01/23/2015 (actual)
Facility Contact:	MATT REILE 907 929 4108 MATTHEW.R.REILE@EXXONMOBIL.COM	**FRS Number:**	110058932561
Facility Description:	OIL GAS EXPLORATION AND PRODUCTION FACILITY.	**SIC Code:**	1382
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	211111
Permit URL:	http://dec.alaska.gov/Applications/Air/airtoolsweb/Home/ViewAttachment/16685549/QXjhK6BJvK3h8EByjhru7Q2		
EPA Region:	10	**COUNTRY:**	USA

Facility County: USA

Facility State: AK

Facility ZIP Code:

Permit Issued By: ALASKA DEPT OF ENVIRONMENTAL CONS (Agency Name)
MR. JIM PLOSAY(Agency Contact) (907) 465-5103 JOHN.KUTERBACH@ALASKA.GOV

Permit Notes: Revise Existing RBLC ID AK-0076 to include pollutants: PM-10 and VOC which now trigger PSD.

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
INTL BORDER		US/Canada Border	< 100 km

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	122.0000 (Tons/Year)
Nitrogen Oxides (NOx)	294.3000 (Tons/Year)
Particulate Matter (PM)	25.9000 (Tons/Year)
Sulfur Oxides (SOx)	32.1000 (Tons/Year)
Volatile Organic Compounds (VOC)	43.3000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: Turbines

Process Type: 16.150 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Fuel Gas

Throughput: 7520.00 kW

Process Notes: Four 7.52 MW Solar Turbines with SoLoNOx Technology burning natural gas on the North Slope of Alaska, north of the Artic Circle. Two of the turbines are dual fired units that can combust ULSD as well as Fuel Gas

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 15.0000 PPMV 15% OXYGEN

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (B) Dry Low NOx and SoLoNOx. DLN combustors utilize multistage premix combustors where the air and fuel is mixed at a lean fuel to air ratio. The excess air in the lean mixture acts as a heat sink, which lowers peak combustion temperatures and also ensures a more homogeneous mixture, both resulting in greatly reduced NOX formation rates. SoLoNOx is a lean premixed process which improves combustion efficiency and reduce NOx and particulate emissions.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 2.5000 PPMV 15% OXYGEN

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) SCR (Selective Catalytic Reduction) is a post-combustion gas treatment technique for reduction of nitric oxide (NO) and nitrogen dioxide (NO2) in the turbine exhaust stream to molecular nitrogen, water, and oxygen. This process is accomplished by using ammonia (NH3) as a reducing agent, and is injected into the flue gas upstream of the catalyst bed. By lowering the activation energy of the NOX decomposition removal efficiency of 80 to 90 percent are achievable.

Est. % Efficiency: 85.000

Cost Effectiveness: 1400 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0660 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0066 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.5000 PPMV
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 89336.0000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Airstrip Generator Engine
Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Ultra Low Sulfur Diesel

Throughput: 490.00 hp

Process Notes: One 490 hp Airstrip Generator Engine

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0025 LB/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 4.8000 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6000 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 163.0000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fine Water Pumps
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: Ultra Low Sulfur Diesel
Throughput: 610.00 hp
Process Notes: Two ULSD-fired 610 hp Fine Water Pumps

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 3.0000 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6000 GRAMS/HP-H

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0007 LB/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 565.0000 TONS/YEAR COMBINED

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Bulk Tank Generator Engines
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: Ultra Low Sulfur Diesel
Throughput: 891.00 hp
Process Notes: Two ULSD-fired 891 hp Bulk Tank Storage Area Generator Engines

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 4.8000 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6000 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0007 LB/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 7194.0000 TONS/YEAR COMBINED
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Agitator Generator Engine
Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: Ultra Low Sulfur Diesel
Throughput: 98.00 hp
Process Notes: ULSD-fired 98 hp Agitator Generator Engine

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 3.7000 GRAMS/HP-H
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 5.6000 GRAMS/HP-H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3000 GRAMS/HP-H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3000 GRAMS/HP-H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0025 LB/HP-H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 356.0000 TONS/YEAR

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Incinerator Generator Engine

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Ultra Low Sulfur Diesel

Throughput: 102.00 hp

Process Notes: ULSD-fired 102 hp Incinerator Generator Engine

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 3.7000 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Dioxide (NO2)

CAS Number: 10102-44-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx))
Emission Limit 1: 4.9000 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2200 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2200 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0025 LB/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 516.0000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Boilers and Heaters

Process Type: 13.220 (Distillate Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Ultra Low Sulfur Diesel

Throughput: 7.00 MMBTU/H

Process Notes: 33 ULSD-fired Boilers and Heaters ranging from 1 to 7 MMBtu/hr

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 20.0000 LB/1,000 GAL

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 5.0000 LB/1,000 GAL

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 2.3000 LB/1,000 GAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.5500 LB/1,000 GAL
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.2520 LB/1,000 GAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 45537.0000 TONS/YEAR COMBINED
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Waste Incinerator
Process Type: 21.400 (Municipal Waste Combustion)
Primary Fuel: Gas, ULSD, or Trash
Throughput: 4.90 MMBTU/H
Process Notes: 4.9 MMBtu Gas-, ULSD-, or Trash-fired new, small, remote Waste Incinerator capable of firing 220 lbs/hr

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 170.0000 PPMV
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 13.0000 PPMV
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 270.0000 MG/DSCM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 270.0000 MG/DSCM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.0000 LB/TON
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 981.0000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Remote Incinerator Generator Engine
Process Type: 21.400 (Municipal Waste Combustion)
Primary Fuel: Ultra Low Sulfur Diesel
Throughput: 102.00 hp
Process Notes: 102 hp ULSD-fired existing, small, remote Waste Incinerator

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 3.0000 LB/TON
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 10.0000 LB/TON
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.0000 LB/TON
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.0000 LB/TON
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.0000 LB/TON
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 892.0000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Drilling, HP, and LP Flares
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: Gas
Throughput: 50.00 MMscf/yr
Process Notes: 50 MMscf/yr Drilling Flare, 35 MMscf/yr HP Flare-Pilot/Purge, 20 MMscf/yr LP Flare-Pilot/Purge

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0264 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0264 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1400 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 5317.0000 TONS/YEAR COMBINED
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Emergency Camp Generators

Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Ultra Low Sulfur Diesel

Throughput: 2695.00 hp

Process Notes: Three 2,695 hp ULSD-fired Standby Camp Generator Engines.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 4.8000 GRAMS/HP-H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 2.6000 GRAMS/HP-H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 GRAMS/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0007 LB/HP-H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 2332.0000 TONS/YEAR COMBINED
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:	
Control Method:	(N)
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	

Facility Information

RBLC ID:	AK-0083 (final)	**Date Determination Last Updated:**	02/19/2016
Corporate/Company Name:	AGRIUM U.S. INC.	**Permit Number:**	AQ0083CPT06
Facility Name:	KENAI NITROGEN OPERATIONS	**Permit Date:**	01/06/2015 (actual)
Facility Contact:	TED HARTMAN 913 302 7469 TED.HARTMAN@AGRIUM.COM	**FRS Number:**	110030488620
Facility Description:	The Kenai Nitrogen Operations Facility is located at Mile 21 of the Kenai Spur Highway, near Kenai Alaska. It is classified as a nitrogenous fertilizer manufacturing facility under Standard Industrial Classification code 2873 and under North American Industrial Classification code 325311. The facility will produce ammonia and urea for bulk sale. There are two ammonia and two urea plants at Agrium's KNO facility. This permit authorizes the restart of one ammonia and one urea plant (plants 4 and 5). The ammonia plant converts natural gas with added steam and air to produce ammonia (NH3) and carbon dioxide (CO2). Feedstocks for the urea plant include CO2 and NH3. The utility plant generates the power and steam needed to operate the ammonia and urea plants. Final products are loaded at the Product Loading Wharf for shipment.	**SIC Code:**	2873
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325311
Permit URL:	http://dec.alaska.gov/Applications/Air/airtoolsweb/Home/ViewAttachment/16672291/KQZafTqmYd8SVnZ3RUWQfQ2		
EPA Region:	10	**COUNTRY:**	USA
Facility County:	USA		
Facility State:	AK		
Facility ZIP Code:	99611		
Permit Issued By:	ALASKA DEPT OF ENVIRONMENTAL CONS (Agency Name) MR. JIM PLOSAY(Agency Contact) (907) 465-5103 JOHN.KUTERBACH@ALASKA.GOV		
Permit Notes:			

Affected Boundaries:	**Boundary Type:**	**Class 1 Area State:**	**Boundary:**	**Distance:**
	CLASS1	AK	Denali NP	100km - 50km

	CLASS1	AK	Tuxedni	< 100 km
	INTL BORDER		US/Canada Border	> 250 km

Facility-wide Emissions:	Pollutant Name:	Facility-wide Emissions Increase:
	Carbon Monoxide	730.5000 (Tons/Year)
	Nitrogen Oxides (NOx)	214.1000 (Tons/Year)
	Particulate Matter (PM)	174.8000 (Tons/Year)
	Sulfur Oxides (SOx)	8.9000 (Tons/Year)
	Volatile Organic Compounds (VOC)	114.2000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: Five (5) Natural Gas Fired Combustion Turbines

Process Type: 16.110 (Natural Gas (includes propane & liquified petroleum gas))

Primary Fuel: Natural Gas

Throughput: 37.60 MMBTU/H

Process Notes: Five (5) Natural Gas-Fired Solar Combustion Turbines rated at 37.6 MMBtu/hr each. Installed in 1976.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 7.0000 PPMV 3-HR AVG @ 15 % O2

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Selective Catalytic Reduction

Est. % Efficiency: 80.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 50.0000 PPMV 3-HR AVG @ 15 % O2
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 10836 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The economic analysis indicates the level of CO reduction does not justify the use of catalytic oxidation. Based on the excessive cost per ton of CO removed per year, installing catalytic oxidation on the turbines/waste heat boilers is not considered a feasible option for reducing CO emissions.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0021 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 291788 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The economic analysis indicates the level of VOC reduction does not justify the use of catalytic oxidation. Based on the excessive cost per ton of VOC removed per year, installing catalytic oxidation on the turbines is not considered a feasible option for reducing VOC emissions.

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 59.6100 TONS/MMCF 3-HR AVG
Emission Limit 2: 91500.0000 TONS/YEAR COMBINED
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Primary Reformer Furnace

Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: Natural Gas, Process Gas

Throughput: 1350.00 MMBTU/H

Process Notes: Natural Gas-, Process Gas-Fired 1,350 MMBtu/hr Primary Reformer Furnace. Installed in 1976.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 17.0000 PPMV 30-DAY AVERAGE @ 3% O2

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Selective Catalytic Reduction

Est. % Efficiency: 90.000

Cost Effectiveness: 15041 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes: The economic analysis indicates the level of NOx reduction does not justify installing low NOx burners to be used in conjunction with selective catalytic reduction. Based on the excessive cost per ton of NOx removed per year, installation of low NOx burners on the primary reformer is not considered a feasible option for reducing NOx emissions.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0430 LB/MMBTU 3-HR AVG

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 59.6100 TONS/MMCF 3-HR AVG
Emission Limit 2: 700000.0000 TONS/YEAR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Three (3) Package Boilers
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: Natural Gas

Throughput: 243.00 MMBTU/H

Process Notes: Three (3) New Natural Gas-Fired 243 MMBtu/hr Package Boilers

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0100 LB/MMBTU 30-DAY AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Ultra Low NOx Burners

Est. % Efficiency: 70.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 50.0000 PPMV 3-HR AVG @ 3% O2

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 143952 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The economic analysis indicates the level of VOC reduction does not justify the use of catalytic oxidation. Based on the excessive cost per ton of VOC removed per year, installing catalytic oxidation on the package boilers is not considered a feasible option for reducing VOC emissions.

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 59.6100 TONS/MMCF 3-HR AVG
Emission Limit 2: 376500.0000 TONS/YEAR COMBINED
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Five (5) Waste Heat Boilers
Process Type: 13.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: Natural Gas
Throughput: 50.00 MMBTU/H
Process Notes: Five (5) Natural Gas-Fired 50 MMBtu/hr Waste Heat Boilers. Installed in 1986.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 7.0000 PPMV 3-HR AVG @ 15 % O2

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Selective Catalytic Reduction
Est. % Efficiency: 81.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 50.0000 PPMV 3-HR AVG @ 15 % O2
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVG

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Use (200 hr/yr)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU 3-HR AVG
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 59.6100 TONS/MMCF 3-HR AVG

Emission Limit 2: 131405.0000 TONS/YEAR COMBINED
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Startup Heater
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: Natural Gas
Throughput: 101.00 MMBTU/H
Process Notes: Natural Gas-Fired 101 MMBtu/hr Startup Heater. Installed in 1976.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0980 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Use (200 hr/yr)
Est. % Efficiency:
Cost Effectiveness: 55705 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The economic analysis indicates the level of NOx reduction does not justify installing selective catalytic reduction. Based on the excessive cost per ton of NOx removed per year, installation of selective catalytic reduction on the startup heater is not considered a feasible option for reducing NOx emissions.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0820 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Limited Use (200 hr/yr)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0054 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Limited Use (200 hr/yr)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Use (200 hr/yr)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Use (200 hr/yr)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 59.6100 TONS/MMCF
Emission Limit 2: 1200.0000 TONS/YEAR
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Use (200 hr/yr)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Three (3) Flares
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: Natural Gas
Throughput: 1.25 MMBTU/H
Process Notes: 1.25 MMBtu/hr Ammonia Tank Flare, 0.4 MMBtu/hr Emergency Flare, and 1.25 MMBtu/hr Small Flare

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.3700 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0054 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0074 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 59.6100 TONS/MMCF
Emission Limit 2: 1500.0000 TONS/YEAR COMBINED
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Diesel Fired Well Pump

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel

Throughput: 2.70 MMBTU/H

Process Notes: 2.7 MMBtu/hr Diesel Fired Well Pump. Installed in 1966.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 4.4100 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) Limited Operation of 168 hr/yr.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.9500 LB/MMBTU

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3600 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3100 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3100 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3100 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 37.2000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Gasoline Fired Fire Pump Engine
Process Type: 17.220 (Other Liquid Fuel & Liquid Fuel Mixtures)
Primary Fuel: Gasoline
Throughput: 2.10 MMBTU/H
Process Notes: 2.1 MMBtu/hr Gasoline-Fired Fire Pump Engine. Installed in 1978.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 1.6300 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.9900 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.0300 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1000 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1000 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1000 LB/MMBTU
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 27.2000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited Operation of 168 hr/yr.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Ammonia Plant, CO2 Vent
Process Type: 62.999 (Other Inorganic Chemical Manufacturing Sources)
Primary Fuel: Natural Gas
Throughput: 1800.00 T/D
Process Notes: The CO2 vent, vents excess CO2 from ammonia process. During times when ammonia plant is operating and Urea plant is not operating, all CO2 generated by ammonia plant operations is vented through this vent.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 11.4000 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 845486.0000 TONS/YEAR
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: H2 Vent
Process Type: 62.999 (Other Inorganic Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes: H2 vent stack (dry gas vent) – vents during startup only

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 15222.0000 LB/STARTUP
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Limited use (200 hr/yr)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Two (2) Urea Granulation Units
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 1200.00 T/D
Process Notes: Two (2) Urea Granulation Units rated at 1200 tons per day (each).

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 90.0000 % CONTROL METHANOL WHICHEVER IS LESS RESTRICTIVE
Emission Limit 2: 2.0000 PPMV WHICHEVER IS LESS RESTRICTIVE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (A) Wet Scrubber
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2000 LB/TON OF UREA
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Wet Scrubber
Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2000 LB/TON OF UREA
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (A) Wet Scrubber
Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2000 LB/TON OF UREA
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Wet Scrubber
Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Urea UF-85 Storage Tank
Process Type: 42.009 (Volatile Organic Liquid Storage)
Primary Fuel:
Throughput: 30440.00 gallons
Process Notes: Urea UF-85 Storage Tank. 30,440 gallon capacity

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC

Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Wet Scrubber
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Two (2) Methyl-diethanol Amine (MDEA) Storage Tanks
Process Type: 42.009 (Volatile Organic Liquid Storage)
Primary Fuel:
Throughput: 158420.00 gallons
Process Notes: Two (2) MDEA Storage Tanks with rated capacities of 158,420 gallons and 16,000 gallons.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0020 TONS/YEAR COMBINED
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Submerged Fill Design

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Urea Ship Loading
Process Type: 99.110 (Agricultural Activities)
Primary Fuel:
Throughput: 1000.00 tons urea/hour
Process Notes: The Urea Ship Loading Operations are conveyor systems used to load products from the Urea Plant into ships.

POLLUTANT NAME: Particulate matter, fugitive
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 0.0013 LB/TON OF UREA
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) Use of UF-85 (Hardening Agent), Product Coolers on Granulation Urea Process Lines, Loading into Partial Enclosure, and use of a Telescoping Chute
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0011 LB/TON OF UREA
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) Use of UF-85 (Hardening Agent), Product Coolers on Granulation Urea Process Lines, Loading into Partial Enclosure, and use of a Telescoping Chute.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0004 LB/TON OF UREA
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) Use of UF-85 (Hardening Agent), Product Coolers on Granulation Urea Process Lines, Loading into Partial Enclosure, and use of a Telescoping Chute.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Urea Handling Units

Process Type: 99.110 (Agricultural Activities)

Primary Fuel:

Throughput: 1000.00 tons urea/hour

Process Notes:

POLLUTANT NAME: Particulate matter, fugitive

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1: 0.0050 GRAINS/DSCF 3 STACK TEST AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Fully Enclosed Conveyors and Fabric Filters

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0050 GRAINS/DSCF 3 STACK TEST AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (A) Fully Enclosed Conveyors and Fabric Filters
Est. % Efficiency: 99.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GRAINS/DSCF 3 STACK TEST AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Fully Enclosed Conveyors and Fabric Filters
Est. % Efficiency: 99.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: 2 Cell Cross-Flow Cooling Tower
Process Type: 99.110 (Agricultural Activities)
Primary Fuel:
Throughput: 15000.00 gallons per minute
Process Notes: 2 Cell Cross-Flow Cooling Tower

POLLUTANT NAME: Particulate matter, fugitive

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 0.0020 % DRIFT
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) High Efficiency Drift Eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0020 % DRIFT
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) High Efficiency Drift Eliminators
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	0.0020 % DRIFT
Emission Limit 2:	
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	
Control Method:	(A) High Efficiency Drift Eliminators
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	

Facility Information

RBLC ID:	IN-0173 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	MIDWEST FERTILIZER CORPORATION	**Permit Number:**	129-33576-00059
Facility Name:	MIDWEST FERTILIZER CORPORATION	**Permit Date:**	06/04/2014 (actual)
Facility Contact:	MICHAEL CHORLTON 3176258315	**FRS Number:**	110059696841
Facility Description:	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	**SIC Code:**	2873
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325311
Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/33576F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	POSEY		
Facility State:	IN		
Facility ZIP Code:	47620		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		

Other Agency Contact Info: PERMIT WRITER:
DAVID MATOUSEK (317) 232-8253 DMATOUSE@IDEM.IN.GOV

SECTION CHIEF:
NATHAN BELL (317) 233-5670 NBELL@IDEM.IN.GOV

Permit Notes:

Process/Pollutant Information

PROCESS NAME: REFORMER FURNACE

Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: NATURAL GAS, PROCESS GAS

Throughput: 950.64 MMBTU/H

Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 5.3850 LB/MMCF 3-HR AVERAGEE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 5.3850 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 9.0000 PPMVD @3% OXYGEN THIRTY DAY ROLLING AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR), LOW NOX BURNERS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 43.4500 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 59.6100 T/MMCF 3-HR AVERAGE
Emission Limit 2: 486675.0000 TON CO2/YR MONTHLY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 80% THERMAL EFFICIENCY BASED ON HIGHER HEATING VALUE.

Process/Pollutant Information

PROCESS NAME: STARTUP HEATER

Process Type: 15.110 (Natural Gas (includes propane & liquified petroleum gas))

Primary Fuel: NATURAL GAS

Throughput: 92.50 MMBTU/H

Process Notes: NATURAL GAS USAGE SHALL NOT EXCEED 18.14 MMCF/YEAR.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 183.7000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 37.2300 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 59.6100 T/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TWO (2) NATURAL GAS FIRED COMBUSTION TURBINES
Process Type: 16.210 (Natural Gas (includes propane & liquified petroleum gas))
Primary Fuel: NATURAL GAS
Throughput: 283.00 MMBTU/H, EACH
Process Notes: NATURAL GAS FIRED, OPEN-SIMPLE CYCLE COMBUSTION TURBINES WITH HEAT RECOVERY

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0076 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0076 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 22.6500 PPMVD AT 15% OXYGEN 3-HR AVERAGE AT > 50% PEAK LOAD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) DRY LOW NOX COMBUSTORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0300 LB/MMBTU 3-HR AVERAGE AT > 50% PEAK LOAD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.5000 PPMVD AT 15% OXYGEN 1-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 12666.0000 BTU/KW-H, MINIMUM CONTINUOUS
Emission Limit 2: 116.8900 LB/MMBTU 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: CO2 EMISSIONS SHALL NOT EXCEED 144,890 TON/YEAR

Process/Pollutant Information

PROCESS NAME: THREE (3) AUXILARY BOILERS
Process Type: 16.210 (Natural Gas (includes propane & liquified petroleum gas))
Primary Fuel: NATURAL GAS
Throughput: 218.60 MMBTU/H, EACH
Process Notes: NATURAL GAS USAGE IN EACH BOILER NOT TO EXCEED 1501.91 MMCF/YR

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 20.4000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) LOW NOX BURNERS, FLUE GAS RECIRCULATION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 37.2200 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 59.6100 T/MMCF 3-HR AVERAGE
Emission Limit 2: 80.0000 % THERMAL EFFICIENCY (HHV)
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN: AIR INLET CONTROLS, HEAT RECOVERY CONDENSATE AND BLOWDOWN HEAT RECOVERY
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: CO2 PURIFICATION PROCESS
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 2400.00 T/D AMMONIA
Process Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0117 LB/TON AMMONIA 3-HR AVERAGE, 100% CO2 VENTING
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER CATALYST SELECTION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0558 LB/TON OF AMMONIA 3-HR AVERAGE, 100% CO2 VENTING
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER CATALYST SELECTION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 1.2750 TON/TON AMMONIA 3-HR AVERAGE, 100% VENTING
Emission Limit 2: 1232475.0000 TON CO2/YEAR MONTHLY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER CATALYST SELECTION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UREA GRANULATION UNIT
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 1440.00 METRIC TONS PER DAY
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1630 LB/TON GRANULES 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1630 LB/TON GRANULES 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1630 LB/TON GRANULES 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UREA GRANULE STORAGE WAREHOUSE
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 LB/H 3-HR AVERAGE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVE EMISSIONS FROM EQUIPMENT LEAKS
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) LEAK DETECTION AND REPAIR (LDAR) PROGRAM USING 40 CFR 60, SUBPART VVA PROCEDURES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: GRANULAR UAN TRUCK LOADOUT OPERATION

Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1200 LB/H 3-HR AVERAGE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1200 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1200 LB/H 3-HR AVERAGE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: GRANULAR UAN RAIL LOADING OPERATION
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UREA JUNCTION OPERATION
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) FABRIC FILTER DUST COLLECTOR

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) FABRIC FILTER DUST COLLECTOR

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: NITRIC ACID PLANT

Process Type: 62.014 (Nitric Acid Plants)

Primary Fuel:

Throughput: 1840.00 METRIC TONS PER DAY

Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0640 LB/TON NITRIC ACID 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)

CAS Number: 10024-97-2
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.6130 LB/TON NITRIC ACID 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) CATALYTIC REACTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: NITRIC ACID LIMIT IS BASED ON 100% NITRIC ACID.

Process/Pollutant Information

PROCESS NAME: FRONT END FLARE

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: NATURAL GAS

Throughput: 4.00 MMBTU/H

Process Notes: SSM VENTING IS LIMITED TO 336 HOURS PER YEAR. HEAT INPUT OF 4 MMBTU/HR IS FOR PILOT ONLY.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 595.4900 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 3240.1600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 47.2600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 511.8100 TON/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: BACK END FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 4.00 MMBTU/H

Process Notes: SSM VENTING SHALL NOT EXCEEDD 336 HOURS PER YEAR. HEAT INPUT IS PILOT ONLY.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 624.9400 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 804.7600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 11.7300 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 127.1200 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA STORAGE FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 1.50 MMBTU/H
Process Notes: HEAT INPUT IS FOR PILOT ONLY. SSM EMISSIONS HAVE SEPARATE LIMITS. SSM VENTING LIMITED 168 HOURS.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 125.0000 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TEN CELL EVAPORATIVE COOLING TOWER
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 147937.00 GPM
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 ML/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: SIX CELL EVAPORATIVE COOLING TOWER

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 88762.00 GPM

Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS

Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS

Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: DIESEL FIRED EMERGENCY GENERATOR
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: NO. 2, DIESEL
Throughput: 3600.00 BHP
Process Notes: ANNUAL OPERATING HOURS SHALL NOT EXCEED 500 HOURS. INSIGNIFICANT ACTIVITY WILL NOT BE TESTED.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 4.4600 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6100 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3100 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 526.3900 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FIRE PUMP
Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel:
Throughput: 500.00 HP
Process Notes: OPERATION LIMITED TO 500 HOURS PER YEAR. INSIGNIFICANT ACTIVITY, WILL NOT BE TESTED.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.8300 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6000 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1410 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 527.4000 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVE DUST FROM PAVED ROADS AND PARKING LOTS
Process Type: 99.140 (Paved Roads)
Primary Fuel:
Throughput: 10402.00 VEHICLE MILES TRAVELED
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 90.0000 % CONTROL CONTINUOUS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PAVE ALL HAUL ROADS, DAILY SWEEPING WITH WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL.
Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 90.0000 % CONTROL CONTINUOUS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PAVE ALL HAUL ROADS, DAILY SWEEPING WITH WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL.
Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 90.0000 % CONTROL CONTINUOUS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PAVE ALL HAUL ROADS, DAILY SWEEPING WITH WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL.
Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: RAW WATER PUMP

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: DIESEL, NO. 2

Throughput: 500.00 HP

Process Notes: OPERATION NOT TO EXCEED 500 HOURS PER YEAR. INSIGNIFICANT ACTIVITY, WILL NOT BE TESTED.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.8300 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6000 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1410 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 527.4000 G/BHP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID:	IN-0180 (final)	**Date Determination Last Updated:**	05/05/2016
Corporate/Company Name:	MIDWEST FERTILIZER CORPORATION	**Permit Number:**	129-33576-00059
Facility Name:	MIDWEST FERTILIZER CORPORATION	**Permit Date:**	06/04/2014 (actual)
Facility Contact:	MICHAEL CHORLTON 3176258315	**FRS Number:**	110059696841
Facility Description:	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	**SIC Code:**	2873
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325311

Permit URL:	HTTP://PERMITS.AIR.IDEM.IN.GOV/33576F.PDF		
EPA Region:	5	**COUNTRY:**	USA
Facility County:	POSEY		
Facility State:	IN		
Facility ZIP Code:	47620		
Permit Issued By:	INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name) MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov		
Other Agency Contact Info:	PERMIT WRITER: DAVID MATOUSEK (317) 232-8253 DMATOUSE@IDEM.IN.GOV SECTION CHIEF: NATHAN BELL (317) 233-5670 NBELL@IDEM.IN.GOV		
Permit Notes:			

Process/Pollutant Information

PROCESS NAME:	REFORMER FURNACE
Process Type:	11.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel:	NATURAL GAS, PROCESS GAS
Throughput:	950.64 MMBTU/H
Process Notes:	

POLLUTANT NAME:	Particulate matter, filterable (FPM)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	1.9000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:	
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	
Control Method:	(P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 5.3850 LB/MMCF 3-HR AVERAGEE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 5.3850 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 9.0000 PPMVD @3% OXYGEN THIRTY DAY ROLLING AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR), LOW NOX BURNERS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 43.4500 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 59.6100 TON/MMCF 3-HR AVERAGE
Emission Limit 2: 486675.0000 T/YR CO2 MONTHLY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 80% THERMAL EFFICIENCY BASED ON HIGHER HEATING VALUE.

Process/Pollutant Information

PROCESS NAME: STARTUP HEATER
Process Type: 15.110 (Natural Gas (includes propane & liquified petroleum gas))
Primary Fuel: NATURAL GAS
Throughput: 92.50 MMBTU/H
Process Notes: NATURAL GAS USAGE SHALL NOT EXCEED 18.14 MMCF/YEAR.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 183.7000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 37.2300 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 59.6100 TON/MMCF 3-HR AVERAGE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN, USE NATURAL GAS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TWO (2) NATURAL GAS FIRED COMBUSTION TURBINES
Process Type: 16.210 (Natural Gas (includes propane & liquified petroleum gas))
Primary Fuel: NATURAL GAS

Throughput: 283.00 MMBTU/H, EACH

Process Notes: NATURAL GAS FIRED, OPEN-SIMPLE CYCLE COMBUSTION TURBINES WITH HEAT RECOVERY

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0076 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0076 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 22.6500 PPMVD AT 15% OXYGEN 3-HR AVERAGE AT > 50% PEAK LOAD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) DRY LOW NOX COMBUSTORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0300 LB/MMBTU 3-HR AVERAGE AT > 50% PEAK LOAD
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.5000 PPMVD AT 15% OXYGEN 1-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 12666.0000 BTU/KW-H, MINIMUM CONTINUOUS
Emission Limit 2: 116.8900 LB/MMBTU 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: CO2 EMISSIONS SHALL NOT EXCEED 144,890 TON/YEAR

Process/Pollutant Information

PROCESS NAME: THREE (3) AUXILARY BOILERS
Process Type: 16.210 (Natural Gas (includes propane & liquified petroleum gas))
Primary Fuel: NATURAL GAS
Throughput: 218.60 MMBTU/H, EACH
Process Notes: NATURAL GAS USAGE IN EACH BOILER NOT TO EXCEED 1501.91 MMCF/YR

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 20.4000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) LOW NOX BURNERS, FLUE GAS RECIRCULATION

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 37.2200 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9

Test Method: Unspecified

Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 59.6100 TON/MMCF 3-HR AVERAGE

Emission Limit 2: 80.0000 % THERMAL EFFICIENCY (HHV)

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES AND PROPER DESIGN: AIR INLET CONTROLS, HEAT RECOVERY CONDENSATE AND BLOWDOWN HEAT RECOVERY

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: CO2 PURIFICATION PROCESS

Process Type: 61.012 (Fertilizer Production (except 61.009))

Primary Fuel:

Throughput: 2400.00 T/D AMMONIA

Process Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0117 LB/TON AMMONIA 3-HR AVERAGE, 100% CO2 VENTING
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER CATALYST SELECTION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0558 LB/TON OF AMMONIA 3-HR AVERAGE, 100% CO2 VENTING
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER CATALYST SELECTION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 1.2750 TON/TON AMMONIA 3-HR AVERAGE, 100% VENTING
Emission Limit 2: 1232475.0000 T/YR CO2 MONTHLY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER CATALYST SELECTION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UREA GRANULATION UNIT
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 1440.00 METRIC T/D
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1630 LB/TON GRANULES 3-HR AVERAGE
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1630 LB/TON GRANULES 3-HR AVERAGE
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1630 LB/TON GRANULES 3-HR AVERAGE
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UREA GRANULE STORAGE WAREHOUSE
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) BAGHOUSE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVE EMISSIONS FROM EQUIPMENT LEAKS

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) LEAK DETECTION AND REPAIR (LDAR) PROGRAM USING 40 CFR 60, SUBPART VVA PROCEDURES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: GRANULAR UAN TRUCK LOADOUT OPERATION

Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1200 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1200 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1200 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: GRANULAR UAN RAIL LOADING OPERATION
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UREA JUNCTION OPERATION
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) FABRIC FILTER DUST COLLECTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: NITRIC ACID PLANT

Process Type: 62.014 (Nitric Acid Plants)

Primary Fuel:

Throughput: 1840.00 METRIC T/D

Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0640 LB/TON NITRIC ACID 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)

CAS Number: 10024-97-2

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.6130 LB/TON NITRIC ACID 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (A) CATALYTIC REACTOR
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NITRIC ACID LIMIT IS BASED ON 100% NITRIC ACID.

Process/Pollutant Information

PROCESS NAME: FRONT END FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 4.00 MMBTU/H
Process Notes: SSM VENTING IS LIMITED TO 336 HOURS PER YEAR. HEAT INPUT OF 4 MMBTU/HR IS FOR PILOT ONLY.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 595.4900 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 3240.1600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 47.2600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 511.8100 TON/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: BACK END FLARE

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: NATURAL GAS

Throughput: 4.00 MMBTU/H

Process Notes: SSM VENTING SHALL NOT EXCEEDD 336 HOURS PER YEAR. HEAT INPUT IS PILOT ONLY.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE

Emission Limit 2: 624.9400 LB/H, SSM VENTING 3-HR AVERAGE

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 804.7600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 11.7300 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 127.1200 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA STORAGE FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 1.50 MMBTU/H
Process Notes: HEAT INPUT IS FOR PILOT ONLY. SSM EMISSIONS HAVE SEPARATE LIMITS. SSM VENTING LIMITED 168 HOURS.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 125.0000 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9

Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TEN CELL EVAPORATIVE COOLING TOWER
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 147937.00 GPM
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 ML/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: SIX CELL EVAPORATIVE COOLING TOWER
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 88762.00 GPM
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT LOSS CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: DIESEL FIRED EMERGENCY GENERATOR

Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: NO. 2, DIESEL

Throughput: 3600.00 BHP

Process Notes: ANNUAL OPERATING HOURS SHALL NOT EXCEED 500 HOURS. INSIGNIFICANT ACTIVITY WILL NOT BE TESTED.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 4.4600 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6100 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3100 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 526.3900 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FIRE PUMP
Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel:
Throughput: 500.00 HP
Process Notes: OPERATION LIMITED TO 500 HOURS PER YEAR. INSIGNIFICANT ACTIVITY, WILL NOT BE TESTED.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.8300 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 2.6000 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1410 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 527.4000 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVE DUST FROM PAVED ROADS AND PARKING LOTS
Process Type: 99.140 (Paved Roads)
Primary Fuel:
Throughput: 10402.00 VEHICLE MILES TRAVELED
Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 90.0000 % CONTROL CONTINUOUS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PAVE ALL HAUL ROADS, DAILY SWEEPING WITH WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL.
Est. % Efficiency: 90.000

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 90.0000 % CONTROL CONTINUOUS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PAVE ALL HAUL ROADS, DAILY SWEEPING WITH WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL.
Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 90.0000 % CONTROL CONTINUOUS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PAVE ALL HAUL ROADS, DAILY SWEEPING WITH WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL.

Est. % Efficiency: 90.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: RAW WATER PUMP
Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: DIESEL, NO. 2
Throughput: 500.00 HP
Process Notes: OPERATION NOT TO EXCEED 500 HOURS PER YEAR. INSIGNIFICANT ACTIVITY, WILL NOT BE TESTED.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.8300 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6000 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1410 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 527.4000 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID:	LA-0291 (final)	**Date Determination Last Updated:**	09/19/2016
Corporate/Company Name:	SASOL CHEMICALS (USA) LLC	**Permit Number:**	PSD-LA-778
Facility Name:	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	**Permit Date:**	05/23/2014 (actual)
Facility Contact:	ERIC RODRIGUEZ (281) 588-3761 ERIC.RODRIGUEZ@US.SASOL.COM	**FRS Number:**	110017418061
Facility Description:		**SIC Code:**	2869
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	325110
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Permit Notes:	Complete application date = date of administrative completeness This RBLC entry addresses the Gas-to-Liquids (GTL) Unit of the GTL Project. GTL will utilize natural gas as a feedstock to produce fuel-grade hydrocarbon products, including liquefied petroleum gas (LPG), naphtha, paraffins, diesel, wax products, and base oil products. In the GTL process, natural gas will first be reformed into a synthesis gas; the synthesis gas will then be converted into liquid hydrocarbons via a Fischer-Tropsch reaction. The Fisher-Tropsch synthesis is followed by treatment and extraction units and product work-up units which produce the desired products.		

Process/Pollutant Information

PROCESS NAME:	Process Heaters (EQT 690, 691, 692, 751, 752, & 753)
Process Type:	11.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)
Primary Fuel:	Process Gas
Throughput:	424.80 MMBTU/H
Process Notes:	Heaters are subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME:	Particulate matter, total < 10 µ (TPM10)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	3.2000 LB/H HOURLY MAXIMUM
Emission Limit 2:	11.5500 T/YR ANNUAL MAXIMUM
Standard Emission:	0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME:	Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	3.2000 LB/H HOURLY MAXIMUM
Emission Limit 2:	11.5500 T/YR ANNUAL MAXIMUM
Standard Emission:	0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME:	Sulfur Dioxide (SO2)
CAS Number:	7446-09-5

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 25.2500 LB/H HOURLY MAXIMUM
Emission Limit 2: 2.2800 T/YR ANNUAL MAXIMUM
Standard Emission: 0.0015 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Other
Other Test Method: CEMS
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 21.4700 LB/H HOURLY MAXIMUM
Emission Limit 2: 15.5000 T/YR ANNUAL MAXIMUM
Standard Emission: 0.0100 LB/MMBTU 30-DAY ROLLING AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (B) Ultra low NOx burners (ULNB) and selective catalytic reduction (SCR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be the use of SCR and ULNBs to limit NOx emissions to 0.01 lb/MM Btu (30-day rolling average). During startup events, the SCR catalyst must be at the proper operating temperature before ammonia can be injected into the flue gas. Further, the SCR vendor has estimated that the ammonia distribution system may be down for up to 32 hours per year for maintenance. During these periods (i.e., startup/shutdown/maintenance), which may total up to 168 hours per year, NOx emissions shall be limited to

0.05 lb/MM Btu (3-hour average).

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: EPA/OAR Mthd 10

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 15.0300 LB/H HOURLY MAXIMUM

Emission Limit 2: 54.2700 T/YR ANNUAL MAXIMUM

Standard Emission: 0.0350 LB/MMBTU AVERAGE OF 3 1-HR. TEST RUNS

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.3200 LB/H HOURLY MAXIMUM

Emission Limit 2: 8.3600 T/YR ANNUAL MAXIMUM

Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 353891.0000 T/YR ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of natural gas as feedstock and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Process Heater (EQT 702)

Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 73.80 MMBTU/H

Process Notes: Heater is subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.5800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 2.0100 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.5800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 2.0100 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 4.6100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.4000 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.9800 LB/HR HOURLY MAXIMUM
Emission Limit 2: 10.2300 TPY ANNUAL MAXIMUM
Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.7400 LB/HR HOURLY MAXIMUM
Emission Limit 2: 9.4200 TPY ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.4500 TPY ANNUAL MAXIMUM

Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 61709.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of natural gas as feedstock and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of

310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Base Oils DW Reactor Feed Heater (EQT 776)

Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 31.00 MMBTU/H

Process Notes: Heater is subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.8400 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.8400 TPY ANNUAL MAXIMUM
Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 2.0900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1700 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 1.3500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 4.3000 TPY ANNUAL MAXIMUM
Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 1.2400 LB/HR HOURLY MAXIMUM
Emission Limit 2: 3.9600 TPY ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.6100 TPY ANNUAL MAXIMUM
Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 22757.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of natural gas as feedstock and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Base Oils Light Vacuum Feed Heater (EQT 777)

Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 71.20 MMBTU/H

Process Notes: Heater is subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.5600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.9400 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.9400 TPY ANNUAL MAXIMUM
Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 4.4500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.3800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.8800 LB/HR HOURLY MAXIMUM
Emission Limit 2: 9.8700 TPY ANNUAL MAXIMUM
Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 9.0900 TPY ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.4000 TPY ANNUAL MAXIMUM
Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 54343.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of natural gas as feedstock and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Base Oils Heavy Vacuum Feed Heater (EQT 778)

Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 10.00 MM BTU/H

Process Notes: Heater is subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.2700 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.2700 TPY ANNUAL MAXIMUM
Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.8600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.0500 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.5500 LB/HR HOURY MAXIMUM
Emission Limit 2: 1.3900 TPY ANNUAL MAXIMUM
Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.5100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.2800 TPY ANNUAL MAXIMUM

Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.2000 TPY ANNUAL MAXIMUM

Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 6235.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of natural gas as feedstock and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: HC Reactor Feed Heaters (EQT 736 & 754)

Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 70.80 MMBTU/H

Process Notes: Heaters are subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.9200 TPY ANNUAL MAXIMUM
Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.9200 TPY ANNUAL MAXIMUM
Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 4.4300 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.3800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.8600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 9.8200 TPY ANNUAL MAXIMUM
Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6400 LB/HR HOURLY MAXIMUM
Emission Limit 2: 9.0400 TPY ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.3900 TPY ANNUAL MAXIMUM
Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 43002.0000 TPY ANNUAL MAXIMUM (EQT 736)

Emission Limit 2: 44252.0000 TPY ANNUAL MAXIMUM (EQT 754)

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of natural gas as feedstock and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Fractionator Feed Heaters (EQT 737 & 774)

Process Type: 12.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 248.70 MMBTU/H

Process Notes: Heaters are subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.8900 LB/HR HOURLY MAXIMUM

Emission Limit 2: 6.7600 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.8900 LB/HR HOURLY MAXIMUM

Emission Limit 2: 6.7600 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 14.8900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.3300 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 9.6200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 34.4900 TPY ANNUAL MAXIMUM
Standard Emission: 0.0380 LB/MMBTU AVERAGE OF 3 1-HR. TEST RUNS

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 8.8600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 31.7600 TPY ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU AVERAGE OF 3 1-HR. TEST RUNS
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.3700 LB/HR HOURLY MAXIMUM

Emission Limit 2: 4.8900 TPY ANNUAL MAXIMUM

Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 153286.0000 TPY ANNUAL MAXIMUM (EQT 737)

Emission Limit 2: 157892.0000 TPY ANNUAL MAXIMUM (EQT 774)

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of natural gas as feedstock and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming

combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: DW Reactor Feed Heaters (EQT 738 & 775)

Process Type: 13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 56.80 MMBTU/H

Process Notes: Heaters are subject to 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.4600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.5400 TPY ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.4600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.5400 TPY ANNUAL MAXIMUM
Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 3.6100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.3000 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 gr/scf (annual average)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.3300 LB/HR HOURLY MAXIMUM
Emission Limit 2: 7.8700 TPY ANNUAL MAXIMUM
Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.1500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 7.2500 TPY ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 34317.0000 TPY ANNUAL MAXIMUM (EQT 738)

Emission Limit 2: 35302.0000 TPY ANNUAL MAXIMUM (EQT 775)

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of natural gas as feedstock and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall entail filtration of inlet air (to prevent reduced performance caused by dust and debris in the intake air supply); use of refractory materials that provide the highest insulating capacity practicable; proper insulation of equipment and piping to minimize heat loss; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with BACT determination for CO and VOC emissions; compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration; and use of air preheaters to heat incoming combustion air. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.3300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.1200 TPY ANNUAL MAXIMUM

Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and the tune-up provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

Process/Pollutant Information

PROCESS NAME: High Temperature Paint Maintenance Activities (ACT 4)
Process Type: 99.999 (Other Miscellaneous Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 62.1000 LB/HR HOURLY MAXIMUM
Emission Limit 2: 19.8300 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good housekeeping practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Base Oils - Loading (EQT 835)

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 144.90 MM GALS/YR

Process Notes: HOURLY THROUGHPUT IS 218,700 GALS/HR.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 8.4100 LB/H HOURLY MAXIMUM

Emission Limit 2: 2.7900 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Diesel Berth 1 & 2 Loading (EQT 830 & 832)

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 1100.14 MM GALS/YR

Process Notes: THROUGHPUT IS PER BERTH. HOURLY THROUGHPUT IS 136,856 GALS/HR PER BERTH.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.4900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 5.9900 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Group 2 transfer racks under 40 CFR 63 Subpart FFFF.

Process/Pollutant Information

PROCESS NAME: GTL Unit Fugitive Emissions (FUG 15)
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 68.3700 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Leak detection and repair (LDAR) program: 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 21
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 89.1300 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT , MACT
Control Method: (P) Leak detection and repair (LDAR) program: 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 1214.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Leak detection and repair (LDAR) program: 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Vapor Combustor (EQT 834)
Process Type: 19.200 (Emission Control Afterburners & Incinerators (combustion gasses only))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0400 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1700 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of 40 CFR Subpart FFFF, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0400 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1700 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of 40 CFR Subpart FFFF, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0030 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.0100 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart FFFF
Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of 40 CFR Subpart FFFF, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 2.0900 LB/HR HOURLY MAXIMUM

Emission Limit 2: 9.1300 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63 Subpart FFFF

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of 40 CFR Subpart FFFF, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 4.1600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 18.2300 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of 40 CFR Subpart FFFF, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 15.4800 LB/HR HOURLY MAXIMUM
Emission Limit 2: 67.7900 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of 40 CFR Subpart FFFF, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 9753.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63 Subpart FFFF

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of 40 CFR Subpart FFFF, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988. CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Multi-Point Ground Flares (EQT 836 & 837)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 170.8400 LB/HR HOURLY MAXIMUM

Emission Limit 2: 7.1400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 170.8400 LB/HR HOURLY MAXIMUM

Emission Limit 2: 7.1400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.9500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.0300 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 1072.8600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 44.8600 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the

volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 5837.6200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 243.9600 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 461.8100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 55.0800 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 115911.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Process Vents

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes: Includes: Process Condensate Stripper (120-VC-001, EQT 0693) Autothermal Reformer (120-VR-108, EQT 0694) Lift Reactor (130-VR-105, EQT 0695) Wash Water Column (135-VC-001, EQT 0696) CO2 Strippers (135-VC-003, EQT 0697) Dry Condensate Rectifier (135-VC-004, EQT 0698) Primary Separation Column (140-VC-002, EQT 0699) Reaction Vessel (145-VD-001A, EQT 0700) Reaction Vessel (145-VD-001B, EQT 0701) Main Fractionation Column (148-VC-101, EQT 0730) Side Stripper FT80 (148-VC-102, EQT 0731) Side Stripper FT70 (148-VC-103, EQT 0732) Side Stripper FT60 (148-VC-104, EQT 0733) Side Stripper FT50 (148-VC-105, EQT 0734) Emulsifier (148-VD-802, EQT 0735) Light Cut Column (32-VC-001, EQT 0799) Heavy Cut Column (32-VC-002, EQT 0800) Oxygenate Extractor (32-VC-003, EQT 0801) Raffinate Stripper (32-VC-004, EQT 0802) Solvent Recovery Column (32-VC-005, EQT 0803) Regeneration Knockout Drum (32-VD-007, EQT 0804) Heavy Cut Seal Fluid Drum (32-VD-012, EQT 0805) Deethaniser (555-VC-001, EQT 0807)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , MACT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing process vents located in the GTL Unit to Multi-Point Ground Flare 181-MPGF-001 (EQT 0836) or 281-MPGF-002 (EQT 0837).

Process/Pollutant Information

PROCESS NAME: Heat Exchangers

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with the heat exchange system requirements of 40 CFR 63.104

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Sulfuric Acid Storage Tank (EQT 828)

Process Type: 62.020 (Inorganic Liquid/Gas Storage & Handling)

Primary Fuel:

Throughput: 2.60 MM GALS/YR

Process Notes: Tank capacity = 45,000 gals

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT limit is

Process/Pollutant Information

PROCESS NAME: Naphtha Berth 1 & 2 Loading (EQT 831 & 833)

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 1100.00 MM GALS/YR

Process Notes: THROUGHPUT IS PER BERTH.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , SIP , OPERATING PERMIT
Control Method: (A) Vapor combustor
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be routing VOC emissions to Vapor Combustor 599-XP-024.

Process/Pollutant Information

PROCESS NAME: Naphtha Storage Tanks (EQT 815, 816, & 817)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 439.00 MM GALS/YR
Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 10.2 MM GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 10.8500 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , SIP , OPERATING PERMIT
Control Method: (P) Internal floating roof (IFR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Consistent with 40 CFR 63.2470(a) and Table 4 to Subpart FFFF, the floating roof, recordkeeping, and reporting requirements of 40 CFR 63 Subpart WW shall apply.

Process/Pollutant Information

PROCESS NAME: P/O Rundown Tanks (EQT 818, 819, 820, & 821)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 202.00 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 329,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.5700 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Internal floating roof (IFR)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Consistent with 40 CFR 63.2470(a) and Table 4 to Subpart FFFF, the floating roof, recordkeeping, and reporting requirements of 40 CFR 63 Subpart WW shall apply.

Process/Pollutant Information

PROCESS NAME: Statutory Storage Tank (EQT 826)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 439.00 MM GALS/YR

Process Notes: TANK CAPACITY = 12.1 MM GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 12.3800 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , MACT , SIP , OPERATING PERMIT

Control Method: (P) Internal floating roof (IFR)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Consistent with 40 CFR 63.2470(a) and Table 4 to Subpart FFFF, the floating roof, recordkeeping, and reporting requirements of 40 CFR 63 Subpart WW shall apply.

Process/Pollutant Information

PROCESS NAME: Petroleum Wax Storage Tank (EQT 827)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 79.00 MM GALS/YR

Process Notes: TANK CAPACITY = 800,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.7600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fresh Amine Storage Tank (EQT 829)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 79.00 MM GALS/YR

Process Notes: TANK CAPACITY = 16,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0040 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Process Licensor Methanol Tank Nos. 1 & 2 (EQT 797 & 798)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 26.80 MM GALS/YR
Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 207,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , SIP , OPERATING PERMIT
Control Method: (P) Internal floating roof (IFR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Consistent with 40 CFR 63.2470(a) and Table 4 to Subpart FFFF, the floating roof, recordkeeping, and reporting requirements of 40 CFR 63 Subpart WW shall apply.

Process/Pollutant Information

PROCESS NAME: Storage Tanks Routed to Flare

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 0

Process Notes: Includes: Methanol Drainage Tank (EQT 0806) Clean Wax Tank (EQT 0739) Extracted Wax Tank (EQT 0740) Clean Wax Tank (EQT 0779) UCO Tank (EQT 0780) GTLBO XLN Grade Prover Tank (EQT 0781) GTLBO XLN Grade Prover Tank (EQT 0782) GTLBO LN Grade Prover Tank (EQT 0783) GTLBO LN Grade Prover Tank (EQT 0784) GTLBO MN Grade Prover Tank (EQT 0785) GTLBO MN Grade Prover Tank (EQT 0786) GTLBO HN Grade Prover Tank (EQT 0787) GTLBO HN Grade Prover Tank (EQT 0788) Diesel/Naphtha Rework Tank (EQT 0808) Condensate Recovery Tank (EQT 0809) Condensate Recovery Tank (EQT 0810) Raw Wax Tank (EQT 0811) Raw Wax Tank (EQT 0812) Raw Wax Tank (EQT 0813) P/O Rework Tank (EQT 0814) Maintenance Wax Tank (EQT 0963) Benzene Stripper Feed Tank (EQT 0962)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing VOC emissions to Multi-Point Ground Flare 181-MPGF-001 (EQT 0836) or 281-MPGF-002 (EQT 0837). BACT for the Benzene Stripper Feed Tank is determined to be routing VOC emissions to Multi-Point Ground Flare COMON2-GF-1 (EQT 0839).

Process/Pollutant Information

PROCESS NAME: GTLBO XLN Grade Finished Product Tanks (EQT 789 & 790)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 45.30 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 2.18 MM GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.0600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , MACT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: GTLBO LN Grade Finished Product Tanks (EQT 791 & 792)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 55.30 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 2.63 MM GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.3400 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: GTLBO MN Grade Finished Product Tanks (EQT 793 & 794)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 27.70 MM GALS
Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 1.31 MM GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.5900 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: GTLBO HN Grade Finished Product Tanks (EQT 795 & 796)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 24.90 MM GALS/YR
Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 1.16 MM GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.5200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50R Prover Tanks (EQT 703 & 704)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 230.70 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 106,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 5.8600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50R Storage Tank (EQT 705)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 230.70 MM GALS/YR

Process Notes: TANK CAPACITY = 368,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 6.9800 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60R Prover Tanks (EQT 706 & 707)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 157.70 MM GALS/YR
Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 39,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.8600 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60R Storage Tank (EQT 708)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 157.70 MM GALS/YR

Process Notes: TANK CAPACITY = 268,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 4.8400 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT70R Prover Tanks (EQT 709 & 710)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 45.70 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 23,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.1700 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT70R Storage Tank (EQT 711)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 45.70 MM GALS/YR

Process Notes: TANK CAPACITY = 303,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.3700 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT80R Prover Tanks (EQT 712 & 713)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 94.60 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 24,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.3200 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50H Prover Tanks (EQT 714 & 715)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 238.60 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 60,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 5.8500 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50H Storage Tank (EQT 716)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 254.40 MM GALS/YR

Process Notes: TANK CAPACITY = 415,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 7.7400 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60H Prover Tanks (EQT 717 & 718)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 231.80 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 56,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.6800 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60H Storage Tank (EQT 719)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 254.40 MM GALS/YR
Process Notes: TANK CAPACITY = 280,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 7.1600 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT70H Prover Tanks (EQT 720 & 721)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 251.80 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 62,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 6.1700 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50HD Prover Tanks (EQT 722 & 723)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 95.70 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 27,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.3600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60HD Prover Tanks (EQT 724 & 725)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 49.40 MM GALS/YR

Process Notes: THROUGHPUT IS PER TANK TANK CAPACITY = 16,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.2300 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Wax Storage Tank (EQT 726)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 5.30 MM GALS/YR

Process Notes: TANK VOLUME = 24,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.2300 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Product Storage Tank (EQT 727)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 104.10 MM GALS/YR

Process Notes: TANK VOLUME = 40,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.6200 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Product Storage Tank (EQT 728)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 10.00 MM GALS/YR
Process Notes: TANK VOLUME = 40,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Wax Storage Tank (EQT 729)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 228.60 MM GALS/YR

Process Notes: TANK VOLUME = 186,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 6.1600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50 Non-Deoiled/Non HDT Wax Tank (EQT 741)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 44.00 MM GALS/YR

Process Notes: TANK VOLUME = 1.97 MM GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 6.2800 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50 HDT and Deoiled Wax Tank (EQT 742)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 1.39 MM GALS/YR
Process Notes: TANK VOLUME = 69,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.2000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50 HDT Deoiled Blended Wax Tank (EQT 743)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 25.50 MM GALS/YR
Process Notes: TANK VOLUME = 500,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.7300 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60 HDT and Deoiled Wax Tank (EQT 746)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 4.63 MM GALS/YR

Process Notes: TANK VOLUME = 274,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.7300 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT50 Emulsion Wax Tank (EQT 744)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 57.00 MM GALS/YR

Process Notes: TANK VOLUME = 500,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.6600 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60 Non-Deoiled Wax Tank (EQT 745)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 57.00 MM GALS/YR
Process Notes: TANK VOLUME = 545,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.6600 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT60 Blends Wax Tank (EQT 747)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 2.31 MM GALS/YR

Process Notes: TANK VOLUME = 91,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.3300 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT70 Non-Deoiled/Non HDT Wax Tank (EQT 748)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 4.63 MM GALS/YR

Process Notes: TANK VOLUME = 180,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.6600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT70 HDT Wax Tank (EQT 749)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 4.63 MM GALS/YR

Process Notes: TANK VOLUME = 271,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.6700 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FT80 Non-Deoiled/Non HDT Wax Tank (EQT 750)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 9.26 MM GALS/YR

Process Notes: TANK VOLUME = 635,000 GALS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.3300 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Fixed roof; best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	

Facility Information

RBLC ID:	LA-0296 (final)	**Date Determination Last Updated:**	04/28/2017
Corporate/Company Name:	SASOL CHEMICALS (USA) LLC	**Permit Number:**	PSD-LA-779
Facility Name:	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	**Permit Date:**	05/23/2014 (actual)
Facility Contact:	ERIC RODRIGUEZ (281) 588-3761 ERIC.RODRIGUEZ@US.SASOL.COM	**FRS Number:**	110017418061
Facility Description:	The Low Density Polyethylene (LDPE) Unit will produce LDPE by the high pressure polymerization of ethylene.	**SIC Code:**	2821
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	325211
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Permit Notes:	Complete application date = date of administrative completeness This RBLC entry addresses the Low Density Polyethylene (LDPE) Unit of the Lake Charles Cracker Project (LCCP). This entry also addresses the Emergency Diesel Generators associated with the entire LCCP, as all of the permitted units are identical.		

Process/Pollutant Information

PROCESS NAME: LLPDE/LDPE Multi-Point Ground Flare (EQT 640)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: The flare controls the following process vents: Purgas C-1 (LDPE-C-1, EQT 0641) Compressor Area C-2 (LDPE-C-2, EQT 0642) Comonomer Degassing Column C-3 (LDPE-C-3, EQT 0643) Isopentane Degassing Column C-4 (LDPE-C-4, EQT 0644) Purification Bed Regeneration C-7 (LDPE-C-7, EQT 0645) Analyzer Vents C-8 (LDPE-C-8, EQT 0646) Vent Recovery Accumulator C-9 (LDPE-C-9, EQT 0647)

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 37.5100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 4.2700 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 37.5100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 4.2700 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 1.1500 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 174.0900 LB/HR HOURLY MAXIMUM

Emission Limit 2: 39.2500 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 947.2500 LB/HR HOURLY MAXIMUM

Emission Limit 2: 259.0600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 305.0800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 561.2200 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , MACT , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 68285.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: LDPE Fugitives (FUG 13)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: EPA/OAR Mthd 21

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 17.4400 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Leak Detection and Repair (LDAR): 40 CFR 60 Subpart VVa
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: LDPE Thermal Oxidizer (EQT 648)
Process Type: 19.200 (Emission Control Afterburners & Incinerators (combustion gasses only))
Primary Fuel:
Throughput: 122.00 MM BTU/HR
Process Notes: The thermal oxidizer controls the following process vents: Blender M-301 (LDPE-M-301, EQT 0649) Blender M-302 (LDPE-M-302, EQT 0650) Blender M-303 (LDPE-M-303, EQT 0651) Blender M-304 (LDPE-M-304, EQT 0652) Blender M-305 (LDPE-M-305, EQT 0653) Blender M-306 (LDPE-M-306, EQT 0654) Blender M-307 (LDPE-M-307, EQT 0655) Blender M-308 (LDPE-M-308, EQT 0656) Extruder Pellet Hopper BN-700 (LDPE-BN-700, EQT 0657) Pellet Silo BN-801A (LDPE-BN-801A, EQT 0658) Pellet Silo BN-801B (LDPE-BN-801B, EQT 0659) Pellet Silo BN-801C (LDPE-BN-801C, EQT 0660) Pellet Silo BN-801D (LDPE-BN-801D, EQT 0661) Pellet Silo BN-801E (LDPE-BN-801E, EQT 0662) Pellet Silo BN-801F (LDPE-BN-801F, EQT 0663) Centrifugal Dryer Vent D-201 (LDPE-D-201, EQT 0668) Pellet Elutriation Separator / Vent S-353 (LDPE-S-353, EQT 0669) Pellet Elutriation Separator / Vent S-354 (LDPE-S-354, EQT 0670)

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.3600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 3.9800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart SS.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.3600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 3.9800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart SS.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.1600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.4800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart SS.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 8.2900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 24.2000 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart SS.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 45.1000 LB/HR HOURLY MAXIMUM

Emission Limit 2: 131.7000 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart SS.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 11.7600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 34.3400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , MACT , OPERATING PERMIT

Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart SS.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 42165.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart SS.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the applicable provisions of Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Bin B207 Vent (EQT 666)
Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1900 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with the applicable process weight rate limitation established by LAC 33:III.1311.B.

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1900 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with the applicable process weight rate limitation established by LAC 33:III.1311.B.

Process/Pollutant Information

PROCESS NAME: Bin B208 Vent (EQT 667)
Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1900 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (A) Fabric filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be use of fabric filters to limit PM10 emissions to 0.02 gr/dscf. Fabric filters shall be maintained and operated properly. Filter vents shall be inspected for visible emissions on a daily basis. The filter elements (bags) shall be inspected every six months and whenever visual checks indicate maintenance may be necessary. Elements shall be changed as necessary. Records of visual checks and maintenance inspections shall be kept on site for 5 years.

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1900 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (A) Fabric filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be use of fabric filters to limit PM2.5 emissions to 0.02 gr/dscf. Fabric filters shall be maintained and operated properly. Filter vents shall be inspected for visible emissions on a daily basis. The filter elements (bags) shall be inspected every six months and whenever visual checks indicate maintenance may be necessary. Elements shall be changed as necessary. Records of visual checks and maintenance inspections shall be kept on site for 5 years.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0400 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1500 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: W209 Drop Point (EQT 672)

Process Type: 63.999 (Other Polymer and Resin Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0010 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.0010 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: HOURLY BACT LIMIT IS REPRESENTED AS

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0010 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.0010 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: HOURLY AND ANNUAL BACT LIMITS ARE REPRESENTED AS

Process/Pollutant Information

PROCESS NAME: Emergency Diesel Generators (EQTs 622, 671, 773, 850, 994, 995, 996, 1033, 1077, 1105, & 1202)

Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel

Throughput: 2682.00 HP

Process Notes: Non-emergency use is limited to 100 hours per year.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.8800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM limit is 0.20 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.8800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , NSPS

Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PM limit is 0.20 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.0300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0020 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Fuel sulfur content is limited to 15 ppm. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 27.3700 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.3700 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT , NSPS
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NOx + NMHC limit is 6.40 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 15.4300 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.7700 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: CO limit is 3.50 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.8500 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 56.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Facility Information

RBLC ID:	LA-0299 (final)	**Date Determination Last Updated:**	04/28/2017
Corporate/Company Name:	SASOL CHEMICALS (USA) LLC	**Permit Number:**	PSD-LA-779
Facility Name:	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	**Permit Date:**	05/23/2014 (actual)
Facility Contact:	ERIC RODRIGUEZ (281) 588-3761 ERIC.RODRIGUEZ@US.SASOL.COM	**FRS Number:**	110017418061
Facility Description:		**SIC Code:**	2869
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	325199
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Permit Notes:	Complete application date = date of administrative completeness This RBLC entry addresses the expansion of the Ethoxylation Unit. Two new ethoxylate trains (ETO-4 and ETO-5) will be added as part of the Lake Charles Cracker Project. These trains will produce ethoxylated alcohols.		

Process/Pollutant Information

PROCESS NAME: ETO/Guerbet Elevated Flare (EQT 1079)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0900 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0900 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.2100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1100 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 8.5100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 3.2600 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 46.3200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 17.7600 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 33.2900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 5.4800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 3986.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: ETO/Guerbet Vapor Combustion Unit II (EQT 1080)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.7600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2300 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.7600 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.2100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.8900 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 8.7200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 27.7200 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 47.4700 LB/HR HOURLY MAXIMUM
Emission Limit 2: 150.8300 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 31.1900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 46.2800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 54833.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP
Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Fugitives (FUG 21)

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: EPA/OAR Mthd 21

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 10.9200 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , SIP , OPERATING PERMIT

Control Method: (P) Leak Detection and Repair (LDAR): 40 CFR 63 Subpart FFFF

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: #4 Product Storage Tanks (EQTs 1081 & 1082)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 15.00 MM GALS/YR

Process Notes: Tank capacity = 146,800 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 13.0100 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total. BACT limit is per tank.

Process/Pollutant Information

PROCESS NAME: #4 Product Drums (EQTs 1083, 1084, 1086, & 1086)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 5.00 MM GALS/YR

Process Notes: Tank capacity = 27,000 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.5400 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total. BACT limit is per tank.

Process/Pollutant Information

PROCESS NAME: #5 Product Drums (EQTs 1087, 1088, 1089, & 1090)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 2.50 MM GALS/YR
Process Notes: Tank capacity = 27,000 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.5000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total. BACT limit is per tank.

Process/Pollutant Information

PROCESS NAME: Alcohol Storage Tanks (EQTs 1091, 1092, 1093, & 1094)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 5.00 MM GALS/YR
Process Notes: Tank capacity = 146,800 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 10.9400 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total. BACT limit is per tank.

Process/Pollutant Information

PROCESS NAME: Alcohol D150-911 (EQT 1095)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 893271.00 GALS/YR

Process Notes: Tank capacity = 27,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.9600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total.

Process/Pollutant Information

PROCESS NAME: #4 Alcohol Feed Drum (EQT 1096)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 3.50 MM GALS/YR

Process Notes: Tank capacity = 27,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total.

Process/Pollutant Information

PROCESS NAME: #5 Alcohol Feed Drum (EQT 1097)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 2.50 MM GALS/YR
Process Notes: Tank capacity = 27,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.3000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total.

Process/Pollutant Information

PROCESS NAME: #4 Utility Drum (EQT 1098)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 3.50 MM GALS/YR
Process Notes: Tank capacity = 27,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.6200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total.

Process/Pollutant Information

PROCESS NAME: #5 Utility Drum (EQT 1099)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 2.50 MM GALS/YR

Process Notes: Tank capacity = 27,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.6000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total.

Process/Pollutant Information

PROCESS NAME: Novel Catalyst Drum (EQT 1100)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 50000.00 GALS/YR

Process Notes: Tank capacity = 14,400 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.4400 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total.

Process/Pollutant Information

PROCESS NAME: Product Storage Tanks (EQTs 1101 & 1102)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 8.40 MM GALS/YR
Process Notes: Tank capacity = 124,520 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.2200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be a fixed roof to limit annual VOC emissions to the above total. BACT limit is per tank.

Process/Pollutant Information

PROCESS NAME: ETO Loading Rack (EQT 1103)
Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))
Primary Fuel:
Throughput: 146.63 MM GALS/YR
Process Notes: Maximum operating rate = 1000 gals/min

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 26.9800 LB/HR HOURLY MAXIMUM
Emission Limit 2: 28.9400 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Loading Rack (EQT 1104)
Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 37.78 MM GALS/YR

Process Notes: Maximum operating rate = 420 gals/min

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 32.7100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 22.8300 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Heat Exchangers

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Vacuum Pretreatment Condenser (ETO-X-150-412, EQT 1153) Secondary Cooler (ETO-X-150-423, EQT 1154) Post-Treatment Secondary Circuit Cooler (ETO-X-150-432, EQT 1155) Vacuum Pretreatment Condenser (ETO-X-150-512, EQT 1156) Secondary Cooler (ETO-X-150-523, EQT 1157) Post-Treatment Secondary Circuit Cooler (ETO-X-150-532, EQT 1158)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT , MACT
Control Method: (P) Compliance with 40 CFR 63.104
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the heat exchange system requirements of 40 CFR 63.104 (regardless if it is otherwise applicable). These provisions require Sasol to monitor the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak, repair any leaks that are detected, and confirm that the heat exchange system is no longer leaking following repair activities. This section also prescribes recordkeeping and reporting requirements.

Process/Pollutant Information

PROCESS NAME: ETO4 & ETO5 Pre- and Post-Treatment Vessels (EQTs 1145, 1147, 1148, & 1150)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (A) Flare
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be routing the above storage vessels through a closed vent system to the ETO/Guerbet Elevated Flare (EQT 1079), to the ETO/Guerbet Vapor Combustion Unit II (EQT 1080), or to an equivalent flare.

Process/Pollutant Information

PROCESS NAME: Organic Byproduct Collector (EQT 1146)
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Flare
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vent through a closed vent system to the ETO/Guerbet Elevated Flare (EQT 1079) or to ETO/Guerbet Vapor Combustion Unit II (EQT 1080).

Process/Pollutant Information

PROCESS NAME: Aqueous Byproduct Collector (EQT 1149)

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vent through a closed vent system to the ETO/Guerbet Elevated Flare (EQT 1079) or to ETO/Guerbet Vapor Combustion Unit II (EQT 1080).

Process/Pollutant Information

PROCESS NAME: ETO 4 & ETO 5 HH Loop Reactors (EQT 1151 & 1152)

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vents through a closed vent system to the ETO/Guerbet Elevated Flare (EQT 1079) or to ETO/Guerbet Vapor Combustion Unit II (EQT 1080).

Facility Information

RBLC ID: LA-0301 (final)

Date Determination Last Updated: 04/28/2017

Corporate/Company Name: SASOL CHEMICALS (USA) LLC

Permit Number: PSD-LA-779

Facility Name: LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT

Permit Date: 05/23/2014 (actual)

Facility Contact: ERIC RODRIGUEZ (281) 588-3761 ERIC.RODRIGUEZ@US.SASOL.COM

FRS Number: 110017418061

Facility Description:

SIC Code: 2869

Permit Type: B: Add new process to existing facility

NAICS Code: 325110

Permit URL:

EPA Region: 6

COUNTRY: USA

Facility County: CALCASIEU

Facility State: LA

Facility ZIP Code:	70669
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV
Permit Notes:	Complete application date = date of administrative completeness This RBLC entry addresses Ethylene Unit 2 of the Lake Charles Cracker Project. This unit will produce ethylene by thermally cracking ethane in cracking furnaces.

Process/Pollutant Information

PROCESS NAME:	Utility Steam Boiler Nos. 1-3 (EQTs 967, 968, & 969)
Process Type:	11.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)
Primary Fuel:	Process Gas
Throughput:	662.00 MM BTU/HR
Process Notes:	Boilers are subject to 40 CFR 60 Subpart Db and 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME:	Particulate matter, total < 10 μ (TPM10)
CAS Number:	PM
Test Method:	Other
Other Test Method:	Methods 5 & 202
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	5.0200 LB/HR HOURLY MAXIMUM
Emission Limit 2:	52.8700 TPY* ANNUAL MAXIMUM
Standard Emission:	0.0075 LB/MMBTU AVERAGE OF THREE 1-HOUR TEST RUNS

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	*TPY value represents aggregate PM10 limit for all 3 boilers. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Other

Other Test Method: Methods 5 & 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 5.0200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 52.8700 TPY* ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU AVERAGE OF THREE 1-HOUR TEST RUNS

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: *TPY value represents aggregate PM2.5 limit for all 3 boilers. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 1.9800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 10.4300 TPY* ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 grains per standard cubic foot (annual average)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: *TPY value represents aggregate SO2 limit for all 3 boilers.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Other
Other Test Method: CEMS
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 33.7000 LB/HR HOURLY MAXIMUM
Emission Limit 2: 70.9600 TPY* ANNUAL MAXIMUM
Standard Emission: 0.0100 LB/MMBTU 30-DAY ROLLING AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (B) Selective catalytic reduction (SCR) and ultra low NOx burners (ULNB)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: *TPY value represents aggregate NOx limit for all 3 boilers. During startup events, the SCR catalyst must be at the proper operating temperature before ammonia can be injected into the flue gas. Further, the SCR vendor has estimated that the ammonia distribution system may be down for up to 32 hours per year for maintenance. During these periods (i.e., startup/shutdown/maintenance), which may total up to 168 hours per year, NOx emissions shall be limited to 0.05 lb/MM Btu (3-hour average).

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 23.5900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 248.3500 TPY* ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU AVERAGE OF THREE 1-HOUR TEST RUNS
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: *TPY value represents aggregate CO limit for all 3 boilers. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.6300 LB/HR HOURLY MAXIMUM
Emission Limit 2: 38.2600 TPY* ANNUAL MAXIMUM
Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: *TPY value represents aggregate VOC limit for all 3 boilers. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 836405.0000 TPY* ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: *TPY value represents aggregate CO2e limit for all 3 boilers. Good combustion practices shall entail air preparation, as appropriate (to minimize reduced performance caused by dust and debris in the intake air supply); use of service appropriate refractory materials; proper insulation of equipment and piping to minimize heat loss; use of heat exchangers to heat incoming combustion air or boiler feed water, produce steam, etc.; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with LDEQ's BACT determination for CO and VOC emissions; and compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration. The O&M plan shall include provisions to address the temporary removal of equipment from service during normal operations for maintenance and inspections. Good combustion practices shall also include a condensate return system (to return condensate to the boiler feed water system); recovery of waste heat from boiler blowdown; and preheating and treatment of boiler feed water. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Furnace Nos. 1-8 (EQTs 971, 972, 973, 974, 975, 976, 977, & 978)

Process Type: 11.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 654.00 MM BTU/HR

Process Notes: The furnaces are subject to 40 CFR 60 Subparts NNN & RRR and 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Other

Other Test Method: Methods 5 & 202

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 4.2700 LB/HR HOURLY MAXIMUM
Emission Limit 2: 136.7900 TPY* ANNUAL MAXIMUM
Standard Emission: 0.0070 LB/MMBTU AVERAGE OF THREE 1-HOUR TEST RUNS
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: *TPY value represents aggregate PM10 limit for all 8 furnaces. During decoking operations, decoking vents shall be recycled to the fuel gas header, and PM10 emissions shall be limited to 0.03 lb/MM Btu (3-hour average). Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Other
Other Test Method: Methods 5 & 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 4.2700 LB/HR HOURLY MAXIMUM
Emission Limit 2: 136.7900 TPY* ANNUAL MAXIMUM
Standard Emission: 0.0070 LB/MMBTU AVERAGE OF THREE 1-HOUR TEST RUNS
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: *TPY value represents aggregate PM2.5 limit for all 8 furnaces. During decoking operations, decoking vents shall be recycled to the fuel gas header, and PM2.5 emissions shall be limited to 0.03 lb/MM Btu (3-hour average). Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 1.9200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 28.0800 TPY* ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 grains per standard cubic foot (annual average)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: *TPY value represents aggregate SO2 limit for all 8 furnaces.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Other

Other Test Method: CEMS

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 61.0100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 455.4700 TPY* ANNUAL MAXIMUM

Standard Emission: 0.0200 LB/MMBTU 30-DAY ROLLING AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (B) Selective catalytic reduction (SCR) and ultra low NOx burners (ULNB)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: *TPY value represents aggregate NOx limit for all 8 furnaces. During startup events, the SCR catalyst must be at the proper operating temperature before ammonia can be injected into the flue gas. Further, the SCR vendor has estimated that the ammonia distribution system may be down for up to 32 hours per year for maintenance. During these periods (i.e., startup/shutdown/maintenance), which may total up to 425 hours per year, NOx emissions shall be limited to 0.10 lb/MM Btu (3-hour average). During decoking operations, NOx shall be limited to 0.18 lb/MM Btu (3-hour average). During such periods, the firing rate is significantly reduced – 128.6 MM Btu/hr versus 545 MM Btu/hr during normal operations.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: EPA/OAR Mthd 10

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 21.3500 LB/HR HOURLY MAXIMUM

Emission Limit 2: 673.1200 TPY* ANNUAL MAXIMUM

Standard Emission: 0.0350 LB/MMBTU AVERAGE OF THREE 1-HOUR TEST RUNS

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: *TPY value represents aggregate CO limit for all 8 furnaces. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 4.9100 LB/HR HOURLY MAXIMUM
Emission Limit 2: 153.7300 TPY* ANNUAL MAXIMUM
Standard Emission: 0.0080 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , OPERATING PERMIT
Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: *TPY value represents aggregate VOC limit for all 8 furnaces. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 2273111.0000 TPY* ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: *TPY value represents aggregate CO2e limit for all 8 furnaces. Good combustion practices shall entail air preparation, as appropriate (to minimize reduced performance caused by dust and debris in the intake air supply); use of service appropriate refractory materials; proper insulation of equipment and piping to minimize heat loss; use of heat exchangers to heat incoming combustion air or boiler feed water, produce steam, etc.; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with LDEQ's BACT determination for CO and VOC emissions; and compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration. The O&M plan shall include provisions to address the temporary removal of equipment from service during normal operations for maintenance and inspections. Good combustion practices (during normal operations) shall also include recovery of refrigeration capacity from the incoming ethane feed; combustion of available hydrogen-rich off gas as fuel; and minimizing coke formation through proper design and operation. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Thermal Oxidizer (EQT 980)

Process Type: 19.200 (Emission Control Afterburners & Incinerators (combustion gasses only))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.6400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63 Subpart SS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.6400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63 Subpart SS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.0300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0800 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63 Subpart SS

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.2900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 6.6800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart SS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 12.4500 LB/HR HOURLY MAXIMUM
Emission Limit 2: 36.3600 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart SS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 17.7700 LB/HR HOURLY MAXIMUM
Emission Limit 2: 14.9500 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart SS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 3739.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63 Subpart SS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983 and the operating, performance testing, and temperature monitoring requirements of 40 CFR 63.988. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Elevated Flare (EQT 981)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 562.2300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 30.5600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 562.2300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 30.5600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 8.9600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.9700 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 12383.1300 LB/HR HOURLY MAXIMUM
Emission Limit 2: 22.6200 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 67378.7800 LB/HR HOURLY MAXIMUM
Emission Limit 2: 123.0800 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 45046.7600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 59.9200 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 44516.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Ground Flare (EQT 982)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1041.9400 LB/HR HOURLY MAXIMUM

Emission Limit 2: 9.5600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1041.9400 LB/HR HOURLY MAXIMUM

Emission Limit 2: 9.5600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method:	(P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME:	Sulfur Dioxide (SO2)
CAS Number:	7446-09-5
Test Method:	Unspecified
Pollutant Group(s):	(InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1:	803.8400 LB/HR HOURLY MAXIMUM
Emission Limit 2:	9.5900 TPY ANNUAL MAXIMUM
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 8565.3100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 80.8400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 46605.3800 LB/HR HOURLY MAXIMUM
Emission Limit 2: 440.0200 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 24759.7400 LB/HR HOURLY MAXIMUM
Emission Limit 2: 162.8300 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 100085.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasol's SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is

revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Firewater Pump Nos. 1-3 (EQTs 997, 998, & 999)

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: Diesel

Throughput: 500.00 HP

Process Notes: Non-emergency use operating time is limited to 100 hr/yr (per engine).

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1700 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0100 TPY ANNUAL MAXIMUM

Standard Emission: 0.1500 G/BHP-HR

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 60 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1700 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.0100 TPY ANNUAL MAXIMUM
Standard Emission: 0.1500 G/BHP-HR
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0050 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.0010 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: Sulfur content of fuel is limited to 15 ppm. Annual SO2 limit is represented as "

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 3.2100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 60 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NOx + NMHC emissions are limited to 3.0 g/hp-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 2.8700 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1400 TPY ANNUAL MAXIMUM

Standard Emission: 2.6000 G/BHP-HR

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method:	(P) Compliance with 40 CFR 60 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	0.1000 LB/HR HOURLY MAXIMUM
Emission Limit 2:	0.0050 TPY ANNUAL MAXIMUM
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	NSPS , OPERATING PERMIT
Control Method:	(P) Compliance with 40 CFR 60 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	NOx + NMHC emissions are limited to 3.0 g/hp-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

POLLUTANT NAME:	Carbon Dioxide Equivalent (CO2e)
CAS Number:	CO2e

Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 10.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Steam Fugitive Emissions (FUG 17)
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 21
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 88.1400 TPY ANNUAL MAXIMUM
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP , OPERATING PERMIT

Control Method: (P) Leak Detection and Repair (LDAR): LAC 33:III.2122

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Cooling Tower (EQT 979)

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 358000.00 GALS/MIN

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 20.4700 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) High efficiency drift eliminators and low TDS cooling water

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with the permit's emissions limitations.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 20.4700 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) High efficiency drift eliminators and low TDS cooling water

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with the permit's emissions limitations.

Process/Pollutant Information

PROCESS NAME: Process Wastewater Treatment Plant (FUG 18)

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 12647.00 GALS/MIN

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 40.0100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP , MACT , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 63 Subpart G and 40 CFR 61 Subpart FF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The wastewater treatment plant will receive Group 2 wastewater streams from multiple process units.

Process/Pollutant Information

PROCESS NAME: Railcar Loading (EQT 983)
Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))
Primary Fuel:
Throughput: 206.60 MM GALS/YR
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 18.9700 LB/HR HOURLY MAXIMUM
Emission Limit 2: 40.8300 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , SIP , OPERATING PERMIT

Control Method: (A) Thermal oxidation
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be routing VOC emissions through a closed vent system to a thermal oxidizer. No further control is required for the loading of sulfide/spent caustic with a floating layer of oil, as VOC emissions from this activity total only 0.03 TPY.

Process/Pollutant Information

PROCESS NAME: Fugitive Emissions (FUG 19)
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 21
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 90.3100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , SIP , OPERATING PERMIT
Control Method: (P) Leak Detection and Repair (LDAR): 40 CFR 63 Subpart UU
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Methanol/Propanol Storage Tank (EQT 984)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 58824.00 GALS/YR

Process Notes: Tank volume = 216,583 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.1600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , SIP , OPERATING PERMIT

Control Method: (P) Internal Floating Roof

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Sulfuric Acid Storage Tank (EQT 985)

Process Type: 62.020 (Inorganic Liquid/Gas Storage & Handling)

Primary Fuel:

Throughput: 730531.00 GALS/YR

Process Notes: Tank volume = 33,809 gallons

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: PSD permit represents SO2 limit as "

Process/Pollutant Information

PROCESS NAME: Methanol Storage Tank (EQT 986)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 15000.00 GALS/YR
Process Notes: Tank volume = 5000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , SIP , OPERATING PERMIT

Control Method: (P) Internal Floating Roof
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Process Water Tanks (EQTs 987, 988, & 989)
Process Type: 64.006 (Wastewater Collection & Treatment)
Primary Fuel:
Throughput: 730531.00 GALS/YR
Process Notes: Throughput = per tank Tank volume = 1.09 million gallons each

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 17.8200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP , MACT , OPERATING PERMIT
Control Method: (P) Internal Floating Roof
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: VOC limit is per tank.

Process/Pollutant Information

PROCESS NAME: Sulfide Caustic Storage Tanks (EQTs 990, 991, & 992)

Process Type: 62.020 (Inorganic Liquid/Gas Storage & Handling)

Primary Fuel:

Throughput: 4.45 MM GALS/YR

Process Notes: Throughput = per tank Tank volume = 133,643 gallons each

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0300 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Internal Floating Roof

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: VOC limit is per tank.

Process/Pollutant Information

PROCESS NAME: Wash Oil Tank (EQT 993)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 393176.00 GALS/YR

Process Notes: Tank volume = 60,319 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1600 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Internal Floating Roof
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Benzene Stripper (EQT 1135)
Process Type: 64.006 (Wastewater Collection & Treatment)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP , MACT , OPERATING PERMIT
Control Method: (P) Route emissions to the fuel gas system
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Wastewater Drums and Sumps
Process Type: 64.006 (Wastewater Collection & Treatment)
Primary Fuel:
Throughput: 0
Process Notes: Includes the following sources: Caustic Drain Drum (ETH2-95-D-330, EQT 1137) Spent Caustic Flash Drum (ETH2-95-D-331, EQT 1138) Cracked Gas Compressor Oily WWTR Sump (ETH2-M7-9703, EQT 1139) Refrig Compressor Oily Wastewater Sump (ETH2-M8-9704, EQT 1140) Quench Water Oily Wastewater Sump (ETH2-M9-9702, EQT 1141) Caustic Wastewater Sump (ETH2-M10-9705, EQT 1142)

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP , MACT , OPERATING PERMIT
Control Method: (A) Flare
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be routing the above drums and sumps through a closed vent system to the Ground Flare (EQT 0982).

Process/Pollutant Information

PROCESS NAME: Benzene Accumulator (EQT 1143)

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vent through a closed vent system to the Elevated Flare (EQT 0981).

Process/Pollutant Information

PROCESS NAME: Pressurized Tanks

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Propylene Refrigerant Tank (ETH2-D92-9050, EQT 1106) P&P (Propane & Propylene) Tank (ETH2-D92-9051, EQT 1107) Butadiene Tank (ETH2-D92-9052A, EQT 1108) Butadiene Tank (ETH2-D92-9052B, EQT 1109) Co-Product Tank (ETH2-D92-9057, EQT 1112) Propionaldehyde Drum (ETH2-D92-9060, EQT 1114) Ethane Drum (ETH2-TK-1106, EQT 1115)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , SIP

Control Method: (P) Maintain the working pressure sufficient at all times under normal operating conditions to prevent vapor or gas loss to the atmosphere

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: LAC Tank (EQT 1110), Heavy Pygas (HAD) Tank (EQT 1111), and Pentane Drum (EQT 1113)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above storage vessels through a closed vent system to the Elevated Flare (EQT 0981), Ground Flare (EQT 0982), or to an equivalent flare.

Process/Pollutant Information

PROCESS NAME: Wash Oil Tank (EQT 1116) and Dimethyl Sulfide Tank (EQT 1117)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 0

Process Notes: Wash Oil Tank (EQT 1116) = 5000 gallons Dimethyl Sulfide Tank (EQT 1117) = 10,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above storage vessels through a closed vent system to the Elevated Flare (EQT 0981), Ground Flare (EQT 0982), or to an equivalent flare.

Process/Pollutant Information

PROCESS NAME: Sulfide Caustic Oxidation (EQT 1136)

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NESHAP , MACT , OPERATING PERMIT

Control Method: (A) Thermal Oxidizer

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vent through a closed vent system to Thermal Oxidizer Z85-8657 (EQT 0980).

Process/Pollutant Information

PROCESS NAME: C3 Hydrogenation Package (EQT 1127)

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare (or route emissions to the fuel gas system)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vent through a closed vent system to the Ground Flare or to the fuel gas system.

Process/Pollutant Information

PROCESS NAME: Distillation Units

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Demethanizer (ETH2-T-401, EQT 1130) Deethanizer (ETH2-T-501, EQT 1131) Depropanizer (ETH2-T-601, EQT 1133) Debutanizer (ETH2-T-651, EQT 1134)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Route emissions to the fuel gas system
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Sour Water Stripper (EQT 1128)
Process Type: 64.006 (Wastewater Collection & Treatment)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NESHAP , MACT , OPERATING PERMIT

Control Method: (P) Route emissions to the fuel gas system
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Caustic Wash Tower (EQT 1129) and Water Wash Tower (EQT 1132)
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Route emissions to the fuel gas system
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: C2 Hydrogenation Reactor (EQT 1126)

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vents through a closed vent system to the Ground Flare (EQT 0982).

Process/Pollutant Information

PROCESS NAME: Process Vents

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Analyzers (ETH2-Ana, EQT 1121) H2 Dryer Switch (ETH2-H2DS, EQT 1122) Frac Feed Dryer (ETH2-FFD, EQT 1123) Propylene from VCM (ETH2-PVCM, EQT 1124) Startup Converter (ETH2-SC, EQT 1125)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vents through a closed vent system to the Ground Flare (EQT 0982).

Process/Pollutant Information

PROCESS NAME: Loading Operations

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Propylene Refrig Unloading Line (ETH2-PRUL, EQT 1118) PSL Loading Rack (ETH2-PSLLR, EQT 1119) PSL Railcar Samples (ETH2-PSLRS, EQT 1120)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	MACT , SIP , OPERATING PERMIT
Control Method:	(A) Flare
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT is determined to be routing the above process vents through a closed vent system to the Ground Flare (EQT 0982).

Facility Information

RBLC ID:	LA-0302 (final)	**Date Determination Last Updated:**	04/28/2017
Corporate/Company Name:	SASOL CHEMICALS (USA) LLC	**Permit Number:**	PSD-LA-779
Facility Name:	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	**Permit Date:**	05/23/2014 (actual)
Facility Contact:	ERIC RODRIGUEZ (281) 588-3761 ERIC.RODRIGUEZ@US.SASOL.COM	**FRS Number:**	110017418061
Facility Description:		**SIC Code:**	2869
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	325199
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Permit Notes:	Complete application date = date of administrative completeness This RBLC entry addresses the Ethylene Oxide/Monoethylene Glycol (EO/MEG) Unit of the Lake Charles Cracker Project.		

Process/Pollutant Information

PROCESS NAME:	Process Heat Boilers B-910A & B-910B (EQTs 1008 & 1009)
Process Type:	13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)

Primary Fuel: Process Gas

Throughput: 78.00 MM BTU/HR

Process Notes: Heat input = per boiler

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.5800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.8700 TPY* ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour PM10 limitations are per boiler. *Annual PM10 emissions from both boilers are limited to the TPY value reported. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.5800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.8700 TPY* ANNUAL MAXIMUM

Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour PM2.5 limitations are per boiler. *Annual PM2.5 emissions from both boilers are limited to the TPY value reported. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 4.6000 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.3700 TPY* ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 grains per standard cubic foot (gr/scf) (annual average)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour SO2 limitations are per boiler. *Annual SO2 emissions from both boilers are limited to the TPY value reported.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 2.9700 LB/HR HOURLY MAXIMUM

Emission Limit 2: 9.5500 TPY* ANNUAL MAXIMUM

Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Ultra low NOx burners (ULNB)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour NOx limitations are per boiler. *Annual NOx emissions from both boilers are limited to the TPY value reported.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 2.7400 LB/HR HOURLY MAXIMUM

Emission Limit 2: 8.8000 TPY* ANNUAL MAXIMUM

Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour CO limitations are per boiler. *Annual CO emissions from both boilers are limited to the TPY value reported. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer’s recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 69173.0000 TPY* ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: *Annual CO2e emissions from both boilers are limited to the TPY value reported. Good combustion practices shall entail air preparation, as appropriate (to minimize reduced performance caused by dust and debris in the intake air supply); use of service appropriate refractory materials; proper insulation of equipment and piping to minimize heat loss; use of heat exchangers to heat incoming combustion air or boiler feed water, produce steam, etc.; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups consistent with LDEQ's BACT determination for CO and VOC emissions; and compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of boiler tubes and heat exchangers and measures to minimize air infiltration. The O&M plan shall include provisions to address the temporary removal of equipment from service during normal operations for maintenance and inspections. Good combustion practices shall also include a condensate return system (to return condensate to the boiler feed water system); recovery of waste heat from boiler blowdown; and preheating and treatment of boiler feed water. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 1.3600 TPY* ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour VOC limitations are per boiler. *Annual VOC emissions from both boilers are limited to the TPY value reported. Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

Process/Pollutant Information

PROCESS NAME: Elevated Flare and Ground Flare (EQTs 1012 & 1013)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: Normal operating rate = 79,370 lb/hr

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1600 TPY* ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour PM10 limitations are per flare. *Annual PM10 emissions from both flares are limited to the TPY value reported.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1600 TPY* ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour PM2.5 limitations are per flare. *Annual PM2.5 emissions from both flares are limited to the TPY value reported.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.0100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0200 TPY* ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Pound per hour SO2 limitations are per flare. *Annual SO2 emissions from both flares are limited to the TPY value reported.

POLLUTANT NAME:	Nitrogen Oxides (NOx)
CAS Number:	10102
Test Method:	Unspecified
Pollutant Group(s):	(InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:	2.4300 LB/HR HOURLY MAXIMUM
Emission Limit 2:	1.0600 TPY* ANNUAL MAXIMUM
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Pound per hour NOx limitations are per flare. *Annual NOx emissions from both flares are limited to the TPY value reported.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 13.2300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 5.7900 TPY* ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Pound per hour CO limitations are per flare. *Annual CO emissions from both flares are limited to the TPY value reported.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 1998.0000 TPY* ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method:	(P) Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	*Annual CO2e emissions from both flares are limited to the TPY value reported. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

POLLUTANT NAME:	Volatile Organic Compounds (VOC)
CAS Number:	VOC
Test Method:	Unspecified
Pollutant Group(s):	(Volatile Organic Compounds (VOC))
Emission Limit 1:	278.1300 LB/HR HOURLY MAXIMUM
Emission Limit 2:	2.3500 TPY* ANNUAL MAXIMUM
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	MACT , OPERATING PERMIT
Control Method:	(P) Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Pound per hour VOC limitations are per flare. *Annual VOC emissions from both flares are limited to the TPY value reported.

Process/Pollutant Information

PROCESS NAME: E-222 Regenerator Condenser CO2 Vent (EQT 1010)

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.1300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.3400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 8.0200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 5.1500 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , OPERATING PERMIT
Control Method: (P) Compliance with the applicable provisions of 40 CFR 63 Subpart G for Group 2 process vents
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 215473.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Selection of a catalyst that maximizes production of EO over the by-products of CO2 and water to limit CO2e emissions to the hourly and annual rates set forth in the PSD permit

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Cooling Tower (EQT 1011)

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 156000.00 GALS/MIN

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.7100 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) High efficiency drift eliminators and low TDS cooling water

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with emissions limitations.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.7100 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) High efficiency drift eliminators and low TDS cooling water

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The permittee shall determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with emissions limitations.

Process/Pollutant Information

PROCESS NAME: Fugitive Emissions (FUG 20)

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: EPA/OAR Mthd 21
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 26.5100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , SIP , OPERATING PERMIT
Control Method: (P) Leak Detection and Repair (LDAR): 40 CFR 63 Subpart H
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 204.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Leak Detection and Repair (LDAR): 40 CFR 63 Subpart H
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Railcar Loading (EQT 1014)

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 883.60 MM GALS/YR

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 27.9600 LB/HR HOURLY MAXIMUM

Emission Limit 2: 2.2800 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Group 2 transfer rack per 40 CFR 63 Subpart G

Process/Pollutant Information

PROCESS NAME: MEG Storage Tanks (EQTs 1015, 1016, & 1017)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 181.44 MM GALS/YR

Process Notes: Tank capacity = 3.86 MM gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.6700 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessels (Group 2 under 40 CFR 63 Subpart G) VOC emission limits are per tank.

Process/Pollutant Information

PROCESS NAME: DEG Storage Tanks (EQTs 1018 & 1019)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 14.97 MM GALS/YR
Process Notes: Tank capacity = 454,000 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessels (Group 2 under 40 CFR 63 Subpart G) VOC emission limits are per tank.

Process/Pollutant Information

PROCESS NAME: TEG Storage Tanks (EQTs 1020 & 1021)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 792000.00 GALS/YR
Process Notes: Tank capacity = 24,000 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessels (Group 2 under 40 CFR 63 Subpart G) VOC emission limits are per tank.

Process/Pollutant Information

PROCESS NAME: DEG Storage Tank (EQT 1022)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 14.97 MM GALS/YR

Process Notes: Tank capacity = 136,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Fixed roof storage vessel (Group 2 under 40 CFR 63 Subpart G)

Process/Pollutant Information

PROCESS NAME: Crude Glycol Storage Tank (EQT 1023)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 181.44 MM GALS/YR

Process Notes: Tank capacity = 976,527 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessel (Group 2 under 40 CFR 63 Subpart G)

Process/Pollutant Information

PROCESS NAME: Crude Heavy Glycol Storage Tank (EQT 1024)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 16.11 MM GALS/YR
Process Notes: Tank capacity = 77,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0300 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessel (Group 2 under 40 CFR 63 Subpart G)

Process/Pollutant Information

PROCESS NAME: PEG Storage Tank (EQT 1025)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 366000.00 GALS/YR
Process Notes: Tank capacity = 24,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessel (Group 2 under 40 CFR 63 Subpart G) Permit represents VOC limit as "

Process/Pollutant Information

PROCESS NAME: MEG Rundown Storage Tanks (EQT 1026 & 1027)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 181.44 MM GALS/YR

Process Notes: Tank capacity = 629,000 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.1800 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Fixed roof storage vessels (Group 2 under 40 CFR 63 Subpart G) VOC emission limits are per tank.

Process/Pollutant Information

PROCESS NAME: DEG Rundown Storage Tanks (EQT 1028 & 1029)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 14.97 MM GALS/YR

Process Notes: Tank capacity = 107,234 gallons each Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0030 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessels (Group 2 under 40 CFR 63 Subpart G) VOC emission limits are per tank.

Process/Pollutant Information

PROCESS NAME: TEG Rundown Storage Tanks (EQT 1030 & 1031)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 792000.00 GALS/YR
Process Notes: Tank capacities: EQT 1030 - 25,569 gallons EQT 1031 - 26,000 gallons Throughput = per tank

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Fixed roof storage vessels (Group 2 under 40 CFR 63 Subpart G) VOC emission limits are per tank.

Process/Pollutant Information

PROCESS NAME: Sulfuric Acid Storage Tank (EQT 1032)
Process Type: 62.020 (Inorganic Liquid/Gas Storage & Handling)
Primary Fuel:
Throughput: 121700.00 GALS/YR
Process Notes: Tank capacity = 16,798 gallons

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Permit represents SO2 limit as "

Process/Pollutant Information

PROCESS NAME: Heat Exchangers

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Wash Water Cooler (EOM-E-116, EQT 1056) Cycle Water Cooler (EOM-E-313, EQT 1057) Reclaim Compressor Aftercooler (EOM-E-320, EQT 1058) Reabsorber Bottom Coolers (EOM-E-322A/B/C, EQT 1059) Reabsorber Water Coolers (EOM-E-321A/B, EQT 1060) Purification Column Condenser (EOM-E-411, EQT 1061) Vacuum Effect Condenser (EOM-E-538, EQT 1062) Wastewater VOC Stripper Bottoms Cooler (EOM-E-570, EQT 1063) Drying Column Condenser (EOM-E-611, EQT 1064) Crude Glycol Tank Feed Cooler (EOM-E-615, EQT 1065) MEG Column Ejector Precondenser (EOM-E-623, EQT 1066) DEG Column Condenser (EOM-E-711, EQT 1067) Crude Heavy Glycol Cooler (EOM-E-715, EQT 1068) TEG Column Condenser (EOM-E-721, EQT 1069) TEG Product Cooler (EOM-E-722, EQT 1070) Blowdown Cooler (EOM-E-940, EQT 1071) Cycle Water Bleed Exchanger (EOM-E-552, EQT 1073) Cycle Water Bleed Cooler (EOM-E-553, EQT 1074) MEG Splitter Condenser (EOM-E-631, EQT 1278)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Compliance with the heat exchange system requirements of 40 CFR 63.104

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the heat exchange system requirements of 40 CFR 63.104 (regardless if it is otherwise applicable). These provisions require Sasol to monitor the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak, repair any leaks that are detected, and confirm that the heat exchange system is no longer leaking following repair activities. This section also prescribes recordkeeping and reporting requirements.

Process/Pollutant Information

PROCESS NAME: Glycol Sump (EQT 1075)

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above sump through a closed vent system to the Elevated Flare (EQT 1012) or to the Ground Flare (EQT 1013).

Process/Pollutant Information

PROCESS NAME: Cycle Water Treating Unit (EQT 1076)

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (A) Combustion (Flare or Process Heat Boiler)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be routing the above vent through a closed vent system to the Elevated Flare (EQT 1012), to the Ground Flare (EQT 1013), to Process Heat Boiler B-910A (EQT 1008), or to Process Heat Boiler B-910B (EQT 1009).

Process/Pollutant Information

PROCESS NAME: Wastewater VOC Stripper (Vent) (EQT 1072)
Process Type: 64.006 (Wastewater Collection & Treatment)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (A) Combustion (Process Heat Boiler)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT is determined to be routing the above vent through a closed vent system to Process Heat Boiler B-910A (EQT 1008) or to Process Heat Boiler B-910B (EQT 1009).

Process/Pollutant Information

PROCESS NAME: EOM Storage Sphere (EQT 1078)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP , OPERATING PERMIT
Control Method: (P) Maintain the working pressure sufficient at all times under normal operating conditions to prevent vapor or gas loss to the atmosphere
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Process Vents

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Evaporator Vent (EOM-F-536, RLP 0122) Drying Column Hotwell (Vent) (EOM-F-610, RLP 0123) DEQ/TEG Columns Hotwell (Vent) (EOM-F-710, RLP 0124) Waste Heat Boiler Pot (Vent) EOM-D-910A/B, RLP 0125)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Combustion (Process Heat Boiler)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vents through a closed vent system to Process Heat Boiler B-910A (EQT 1008) or to Process Heat Boiler B-910B (EQT 1009).

Process/Pollutant Information

PROCESS NAME: Process Vents

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Reactor/Gas Cooler (EOM-R-110, EQT 1034) Sulfur Guard Bed (EOM-R-150, EQT 1035) Glycol Reactor (EOM-R-250, EQT 1036) Regenerator/Feed Flash Drums (EOM-T-220, EQT 1038) Stripping Column/Flash Drum (EOM-T-310, EQT 1039) Reabsorber (EOM-T-320, EQT 1040) Vent Scrubber (EOM-T-330, EQT 1041) Purification Column (EOM-T-410, EQT 1042) Glycol Feed Stripper (EOM-T-510, EQT 1043) First Effect Evaporator (EOM-T-531, EQT 1044) Second Effect Evaporator (EOM-T-532, EQT 1045) Third Effect Evaporator (EOM-T-533, EQT 1046) Fourth Effect Evaporator (EOM-T-534, EQT 1047) Fifth Effect Evaporator (EOM-T-535, EQT 1048) Six Effect Evaporator (EOM-T-536, EQT 1049) Vacuum Effect Evaporator (EOM-T-537, EQT 1050) Aldehyde Stripper (EOM-T-560, EQT 1051) Drying Column (EOM-T-610, EQT 1052) MEG Splitter (EOM-T-630, EQT 1053) DEG Column (EOM-T-710, EQT 1054) TEG Column (EOM-T-720, EQT 1055)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vents through a closed vent system to the Elevated Flare (EQT 1012) or to the Ground Flare (EQT 1013).

Facility Information

RBLC ID: LA-0303 (final)

Date Determination Last Updated: 04/28/2017

Corporate/Company Name: SASOL CHEMICALS (USA) LLC

Permit Number: PSD-LA-779

Facility Name:	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	**Permit Date:**	05/23/2014 (actual)
Facility Contact:	ERIC RODRIGUEZ (281) 588-3761 ERIC.RODRIGUEZ@US.SASOL.COM	**FRS Number:**	110017418061
Facility Description:		**SIC Code:**	2869
Permit Type:	D: Both B (Add new process to existing facility) &C (Modify process at existing facility)	**NAICS Code:**	325199
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	CALCASIEU		
Facility State:	LA		
Facility ZIP Code:	70669		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Permit Notes:	Complete application date = date of administrative completeness This RBLC entry addresses the expansion of the existing Alcohol Unit, part of the Lake Charles Cracker Project. The new process train will produce highly linear primary alcohols ranging from 2 to about 28 carbons using Ziegler technology.		

Process/Pollutant Information

PROCESS NAME:	Reactor Feed Heater (EQT 1160)
Process Type:	13.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)
Primary Fuel:	Process Gas
Throughput:	18.00 MM BTU/HR
Process Notes:	Heater is subject to 40 CFR 60 Subpart Dc and 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME:	Particulate matter, total < 10 μ (TPM10)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	0.1300 LB/HR HOURLY MAXIMUM
Emission Limit 2:	0.4900 TPY ANNUAL MAXIMUM
Standard Emission:	0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT

Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1300 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.4900 TPY ANNUAL MAXIMUM
Standard Emission: 0.0075 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 1.0600 LB/HR HOURLY MAXIMUM
Emission Limit 2: 0.1000 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 grains per standard cubic foot (gr/scf) (annual average)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.6800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 2.5000 TPY ANNUAL MAXIMUM

Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Ultra low NOx burners (ULNB)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.6300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 2.3000 TPY ANNUAL MAXIMUM

Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.1000 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.3500 TPY ANNUAL MAXIMUM

Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 9484.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall entail air preparation, as appropriate (to minimize reduced performance caused by dust and debris in the intake air supply); use of service appropriate refractory materials; proper insulation of equipment and piping to minimize heat loss; use of heat exchangers to heat incoming combustion air; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups; and compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of heat exchangers and measures to minimize air infiltration. The O&M plan shall also include provisions to address the temporary removal of equipment from service during normal operations for maintenance and inspections. Flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Hot Oil Heater (EQT 1161)
Process Type: 12.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)
Primary Fuel: Process Gas
Throughput: 240.00 MM BTU/HR
Process Notes: Heater is subject to 40 CFR 60 Subpart Db and 40 CFR 63 Subpart DDDDD.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	1.7900 LB/HR HOURLY MAXIMUM
Emission Limit 2:	6.5300 TPY ANNUAL MAXIMUM
Standard Emission:	0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME:	Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	1.7900 LB/HR HOURLY MAXIMUM
Emission Limit 2:	6.5300 TPY ANNUAL MAXIMUM
Standard Emission:	0.0075 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) Use of gaseous fuels and good combustion practices
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown

Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 14.1200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.2900 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Use of gaseous fuels with a sulfur content of no more than 0.005 grains per standard cubic foot (gr/scf) (annual average)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 9.1200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 33.2900 TPY ANNUAL MAXIMUM

Standard Emission: 0.0380 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , OPERATING PERMIT

Control Method: (P) Ultra low NOx burners (ULNB)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 8.4000 LB/HR HOURLY MAXIMUM
Emission Limit 2: 30.6600 TPY ANNUAL MAXIMUM
Standard Emission: 0.0350 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.2900 LB/HR HOURLY MAXIMUM
Emission Limit 2: 4.7200 TPY ANNUAL MAXIMUM
Standard Emission: 0.0054 LB/MMBTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall include monitoring of the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature. These parameters shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 145933.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Good combustion practices shall entail air preparation, as appropriate (to minimize reduced performance caused by dust and debris in the intake air supply); use of service appropriate refractory materials; proper insulation of equipment and piping to minimize heat loss; use of heat exchangers to heat incoming combustion air; instrumentation to monitor the flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature; periodic tune-ups; and compliance with a written operations and maintenance (O&M) plan developed by Sasol that addresses topics such as the inspection and cleaning of heat exchangers and measures to minimize air infiltration. The O&M plan shall also include provisions to address the temporary removal of equipment from service during normal operations for maintenance and inspections. Flue gas oxygen content, combustion air flow, fuel consumption, and flue gas temperature shall be maintained within the manufacturer's recommended operating guidelines or within a range that is otherwise indicative of proper operation of the emissions unit. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Elevated Flare (EQT 133)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: Normal operating rate = 860.33 MM lb/yr

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.9000 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.4300 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.9000 LB/HR HOURLY MAXIMUM

Emission Limit 2: 1.4300 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.5100 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.4100 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 55.3200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 41.4200 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 300.9300 LB/HR HOURLY MAXIMUM

Emission Limit 2: 225.4000 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 420.6700 LB/HR HOURLY MAXIMUM

Emission Limit 2: 192.9900 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , MACT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 94386.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method:	(P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME:	Emission Combustion Unit #3 Ground Flare (EQT 500)
Process Type:	19.310 (Chemical Plant Flares)
Primary Fuel:	
Throughput:	0
Process Notes:	Normal operating rate = 860.33 MM lb/yr

POLLUTANT NAME:	Particulate matter, total < 10 µ (TPM10)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	1.5200 LB/HR HOURLY MAXIMUM
Emission Limit 2:	0.4300 TPY ANNUAL MAXIMUM
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.5200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.4300 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 20.7900 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.1400 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 49.6800 LB/HR HOURLY MAXIMUM

Emission Limit 2: 10.7800 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 270.3200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 58.6700 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 566.9700 LB/HR HOURLY MAXIMUM

Emission Limit 2: 92.9800 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 24567.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complex's startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.

Process/Pollutant Information

PROCESS NAME: Melt Bin (EQT 1159)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 45500.00 GALS/YR

Process Notes: Fixed roof container

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 85.2200 LB/HR HOURLY MAXIMUM

Emission Limit 2: 0.0600 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fugitive Emissions (FUG 22)

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: EPA/OAR Mthd 21
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 308.4800 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (P) Leak Detection and Repair (LDAR): 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Leak Detection and Repair (LDAR): 40 CFR 63 Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Loading Rack Operations (EQT 1162)

Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))

Primary Fuel:

Throughput: 196500.00 GALS/HR

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2727.5900 LB/HR HOURLY MAXIMUM

Emission Limit 2: 22.2800 TPY ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Isopropanol/Slurry Tank (EQT 1163)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 0

Process Notes: Tank volume = 9988 gallons Group 2 storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol/Hydrolysis Condensate/Slurry Tanks (EQTs 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, & 1176)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 0
Process Notes: Tank volume = 21,000 gallons each Group 2 storage vessels under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.2500 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: VOC limit is per tank.

Process/Pollutant Information

PROCESS NAME: SSO Storage Tank (EQT 139)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 35.00 MM GALS/YR
Process Notes: Tank volume = 127,092 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.0300 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , SIP , OPERATING PERMIT
Control Method: (P) Internal floating roof
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Tank (EQT 173)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 3.40 MM GALS/YR

Process Notes: Tank volume = 87,569 gallons Group 2 storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.2600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Internal floating roof

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Wastewater Collection and Transfer System (EQT 1203)

Process Type: 64.006 (Wastewater Collection & Treatment)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 4.1500 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) Compliance with the applicable provisions of 40 CFR 61 Subpart FF and 40 CFR 63.2485(j) of Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: S-5500 Vent Knockout Drum (EQT 1206)
Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))
Primary Fuel:
Throughput: 0
Process Notes: The S-5500 Vent Knockout Drum functions as a recovery device for various process equipment located within the Alcohol Unit (i.e., Dehydrator Tower ALC-DA-5501, Butanol Stripper Tower ALC-DA-5504, Ammonia Absorber Tower ALC-DA-5505, and Hydrolysis Reactor ALC-DC-5501).

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 20.4200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , MACT , OPERATING PERMIT

Control Method: (P) Maintain the TRE index value above 5.0 consistent with 40 CFR 63.2455(a) and Table 1 to Subpart FFFF
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Loading Rack (EQT 226)
Process Type: 64.005 (Transfer of SOCMI Chemicals (loading/unloading, filling, etc.))
Primary Fuel:
Throughput: 2400000.00 LB/YR
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1878.2200 LB/HR HOURLY MAXIMUM
Emission Limit 2: 8.4300 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP , OPERATING PERMIT
Control Method: (A) Carbon adsorption
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Growth Product Tanks (EQTs 1177 & 1180)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 124.51 MM GALS/YR

Process Notes: Tank volume = 235,000 gallons each Throughput = per tank Group 2 fixed roof storage vessels under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 5.9200 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: VOC limit is per tank.

Process/Pollutant Information

PROCESS NAME: Growth Product Tanks (EQTs 1178 & 1179)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 126.55 MM GALS/YR

Process Notes: Tank volume = 241,000 gallons each Throughput = per tank Group 2 fixed roof storage vessels under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 4.5000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: VOC limit is per tank.

Process/Pollutant Information

PROCESS NAME: Hydrolysis Water Storage Tank (EQT 1181)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 138.92 MM GALS/YR
Process Notes: Tank volume = 104,000 gallons Fixed roof storage vessel

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.8300 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: Wet Crude Alcohol Storage Tank (EQT 1182)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 291.16 MM GALS/YR
Process Notes: Tank volume = 288,000 gallons Fixed roof storage vessel

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 6.8100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: HF 1000/LPA 140 Tank (EQT 1183)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 25.00 MM GALS/YR

Process Notes: Tank volume = 424,188 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.4000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TPT/LPA 140 Tank (EQT 1184)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 170563.00 GALS/YR

Process Notes: Tank volume = 12,925 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0900 TPY ANNUAL MAXIMUM

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: C6 Alc A & B Tanks (EQTs 1185 & 1186)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 21.00 MM GALS/YR
Process Notes: Tank volume = 763,486 gallons each Throughput = per tank Fixed roof storage vessels

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.4200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes: VOC limit is per tank.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: Light Pure Cut Tank (EQT 1187)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 25.00 MM GALS/YR
Process Notes: Tank volume = 42,301 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4400 TPY ANNUAL MAXIMUM
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , MACT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C1214 Alcohol Tank (EQT 1188)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 12.90 MM GALS/YR

Process Notes: Tank volume = 1.7 million gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.4700 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C8 Pure Cut Tank (EQT 1189)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 10.00 MM GALS/YR

Process Notes: Tank volume = 635,416 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.6600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C10 Pure Cut Tank (EQT 1190)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 11.00 MM GALS/YR
Process Notes: Tank volume = 635,416 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.6200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C12 Pure Cut Tank (EQT 1191)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 8.00 MM GALS/YR
Process Notes: Tank volume = 635,416 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.2900 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10A
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C14 Pure Cut Tank (EQT 1192)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 5.00 MM GALS/YR
Process Notes: Tank volume = 1.26 million gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.3500 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C16 Pure Cut Tank (EQT 1193)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 3.00 MM GALS/YR

Process Notes: Tank volume = 428,271 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.4000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C18 Pure Cut Tank (EQT 1194)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 2.00 MM GALS/YR
Process Notes: Tank volume = 211,492 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.8500 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C810 Alcohol Tank (EQT 1195)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 21.00 MM GALS/YR
Process Notes: Tank volume = 2.59 million gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.9000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT , MACT

Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C1214 Alcohol Tank (EQT 1196)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 13.20 MM GALS/YR
Process Notes: Tank volume = 1.7 million gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC

Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.5100 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C1618 Alcohol Tank (EQT 1197)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 6.40 MM GALS/YR

Process Notes: Tank volume = 845,968 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 2.8400 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: C20+ Alcohol Tank (EQT 1198)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 4.20 MM GALS/YR
Process Notes: Tank volume = 845,968 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.2400 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: Alcohol/Butanol Tank (EQT 158)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 14.60 MM GALS/YR
Process Notes: Tank volume = 42,203 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0010 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The PSD permit represents the CO limit as "

Process/Pollutant Information

PROCESS NAME: Alcohol Tanks (EQTs 159 & 165)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 7.22 MM GALS/YR
Process Notes: Tank volume = 138,924 gallons each Throughput of EQT 165: 7.19 MM gals/yr Group 2 fixed roof storage vessels under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.6900 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT , MACT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: VOC limit is per tank.

Process/Pollutant Information

PROCESS NAME: Alcohol Tank (EQT 171)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 6.87 MM GALS/YR
Process Notes: Tank volume = 132,192 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.6700 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Tank (EQT 174)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 11.14 MM GALS/YR
Process Notes: Tank volume = 214,173 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.4500 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Tank (EQT 176)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 4.56 MM GALS/YR

Process Notes: Tank volume = 87,545 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.5800 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Tank (EQT 182)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 6.87 MM GALS/YR

Process Notes: Tank volume = 132,192 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 3.0800 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Storage Tank (EQT 188)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 22.08 MM GALS/YR
Process Notes: Tank volume = 87,669 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 2.6400 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Storage Tank (EQT 189)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 33.30 MM GALS/YR
Process Notes: Tank volume = 132,192 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 3.9300 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alkoxide Tank Service (EQT 205)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 3.67 MM GALS/YR

Process Notes: Tank volume = 146,880 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.7600 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Tank (EQT 210)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 102.94 MM GALS/YR

Process Notes: Tank volume = 635,460 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 15.0500 TPY ANNUAL MAXIMUM

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Tank (EQT 213)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 11.54 MM GALS/YR
Process Notes: Tank volume = 222,082 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.1200 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Utility Tower Product Tank (EQT 192)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:
Throughput: 19.22 MM GALS/YR
Process Notes: Tank volume = 53,500 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.8400 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Hotwash Solvent Tank (EQT 149)
Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))
Primary Fuel:

Throughput: 5.96 MM GALS/YR

Process Notes: Tank volume = 108,936 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 8.5800 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT , OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Alcohol Utility Tower Product Tank (EQT 193)

Process Type: 64.004 (Storage Tanks (SOCMI only - also see 42.001-42.999 and 62.020))

Primary Fuel:

Throughput: 19.22 MM GALS/YR

Process Notes: Tank volume = 42,203 gallons Group 2 fixed roof storage vessel under 40 CFR 63 Subpart FFFF

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.7700 TPY ANNUAL MAXIMUM
Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , MACT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: ALEX Alkoxide Stripper Tower (EQT 1207)

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vent through a closed vent system to the Elevated Flare (EQT 0133).

Process/Pollutant Information

PROCESS NAME: Reactor and Tower Process Vents

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: Oxidation Reactor (ALC-DC-401C, EQT 0130) ALEX C6 Alcohol Tower (ALC-DA-6001, EQT 1213) ALEX C810 Alcohol Tower (ALC-DA-6002, EQT 1214) ALEX C1214 Alcohol Tower (ALC-DA-6003, EQT 1215) ALEX C1618 Alcohol Tower (ALC-DA-6004, EQT 1216) ALEX Batch Oxidation Reactor (ALC-DC-4001D, EQT 1225) ALEX Batch Oxidation Reactor (ALC-DC-4001E, EQT 1226) ALEX C6OH Hydrogenation Reactor (ALC-DC-6001, EQT 1228) ALEX C810OH Hydrogenation Reactor (ALC-DC-6002, EQT 1229) ALEX C1214OH Hydrogenation Reactor (ALC-DC-6003, EQT 1230) ALEX C1618OH Hydrogenation Reactor (ALC-DC-6004, EQT 1231) ALEX C20+ Hydrogenation Reactor (ALC-DC-6005, EQT 1232) ALEX ADEH Reactor (ALC-DC-2000, EQT 1218) ALEX Hydrogenation Reactor (ALC-DC-2001A, EQT 1219) ALEX Hydrogenation Reactor (ALC-DC-2001B, EQT 1220) ALEX Ethylation Reactor Stage 1 (ALC-DC-2002A, EQT 1221) ALEX Ethylation Reactor Stage 2 (ALC-DC-2002B, EQT 1222) ALEX Growth Reactor (ALC-DC-3001A, EQT 1223) ALEX Growth Reactor (ALC-DC-3001B, EQT 1224)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , MACT

Control Method: (A) Flare

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vents through a closed vent system to the Emission Combustion Unit #3 Ground Flare (EQT 0500).

Process/Pollutant Information

PROCESS NAME: ALEX Utility Tower (EQT 1217)

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (A) Combustion in a heater

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be routing the above process vent through a closed vent system to Old Hot Oil Heater ALC-BA-801 (EQT 0119), to New Hot Oil Heater ALC-BA-802 (EQT 0120), or to SSO Column Heater ALC-H6-404 (EQT 0598).

Process/Pollutant Information

PROCESS NAME: Heat Exchangers

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes: Includes the following sources: ALEX Heat Exchanger (ALC-EA-4205, EQT 1241) ALEX Heat Exchanger (ALC-EA-4206, EQT 1242) ALEX Heat Exchanger (ALC-EA-4207, EQT 1243) ALEX Heat Exchanger (ALC-EA-4208, EQT 1244) ALEX Heat Exchanger (ALC-EA-4209, EQT 1245) ALEX Heat Exchanger (ALC-EA-4211, EQT 1246) ALEX Heat Exchanger (ALC-EA-5510, EQT 1247) ALEX Heat Exchanger (ALC-EA-5511, EQT 1248) ALEX Heat Exchanger (ALC-EA-5512, EQT 1249) ALEX Heat Exchanger (ALC-EA-5518, EQT 1250) ALEX Heat Exchanger (ALC-EA-6002, EQT 1251) ALEX Heat Exchanger (ALC-EA-6004, EQT 1252) ALEX Heat Exchanger (ALC-EA-6005, EQT 1253) ALEX Heat Exchanger (ALC-EA-6006, EQT 1254) ALEX Heat Exchanger (ALC-EA-6009, EQT 1255) ALEX Heat Exchanger (ALC-EA-6018, EQT 1256) ALEX Heat Exchanger (ALC-EA-6023, EQT 1257) ALEX Heat Exchanger (ALC-EA-6031, EQT 1258) ALEX Heat Exchanger (ALC-EA-6032, EQT 1259) ALEX Heat Exchanger (ALC-EA-6033, EQT 1260) ALEX Heat Exchanger (ALC-EA-6036, EQT 1261) ALEX Heat Exchanger (ALC-EA-6038, EQT 1262) ALEX Heat Exchanger (ALC-EA-6039, EQT 1263)

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: MACT , OPERATING PERMIT

Control Method: (P) Compliance with 40 CFR 63.104

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT is determined to be compliance with the heat exchange system requirements of 40 CFR 63.104 (regardless if it is otherwise applicable). These provisions require Sasol to monitor the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak, repair any leaks that are detected, and confirm that the heat exchange system is no longer leaking following repair activities. This section also prescribes recordkeeping and reporting requirements.

Facility Information

RBLC ID:	AR-0121 (final)	**Date Determination Last Updated:**	06/17/2016
Corporate/Company Name:	LSB INDUSTRIES, INC.	**Permit Number:**	0573-AOP-R16
Facility Name:	EL DORADO CHEMICAL COMPANY	**Permit Date:**	11/18/2013 (actual)
Facility Contact:	GREG WITHROW 8708631484 GWITHROW@EDC-ARK.COM	**FRS Number:**	110000746373
Facility Description:	CHEMICAL MANUFACTURING, INCLUDING NITRIC ACID PRODUCTION, SUFLURIC ACID PRODUCTION, AMMONIA PRODUCTION, AND AMMONIA NITRATE PRODUCTION	**SIC Code:**	2873
Permit Type:	B: Add new process to existing facility	**NAICS Code:**	325311
Permit URL:	HTTP://WWW.ADEQ.STATE.AR.US/FTPROOT/PUB/WEBDATABASES/PERMITSONLINE/AIR/0573-AOP-R16.PDF		
EPA Region:	6	**COUNTRY:**	USA
Facility County:	UNION		
Facility State:	AR		
Facility ZIP Code:	71730		
Permit Issued By:	ARKANSAS DEPT OF ENVIRONMENTAL QUALITY (Agency Name) MR. THOMAS RHEAUME(Agency Contact) (501) 682-0762 rheaume@adeq.state.ar.us		
Other Agency Contact Info:	THOMAS RHEAUME, PERMIT BRANCH MANAGER JOSEPH HURT, ENGINEER		
Permit Notes:			

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	AL	Sipsey	100km - 50km

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	161.7000 (Tons/Year)
Nitrogen Oxides (NOx)	724.7000 (Tons/Year)
Particulate Matter (PM)	120.9000 (Tons/Year)
Sulfur Oxides (SOx)	403.4000 (Tons/Year)
Volatile Organic Compounds (VOC)	184.8000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME:	DM WEATHERLY NITRIC ACID PLANT # 2
Process Type:	62.014 (Nitric Acid Plants)

Primary Fuel:

Throughput: 1265.00 T/D

Process Notes: 461,725 TON/YR OF 100% HNO3

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Other

Other Test Method:

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0640 LB/TON 30 DAY ROLLING AVERAGE EXCLUDING SSM

Emission Limit 2: 17.7600 T/YR ROLLING 12 MONTH TOTAL INCLUDING SSM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , SIP , OTHER

Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes: CEMS TO VERIFY COMPLIANCE THIS SOURCE CONTAINS THE FOLLOWING INTERIM LIMITS DURING THE FIRST 12 MONTHS OF OPERATION AS ASSIGNED BY THE ADMINISTRATIVE LAW JUDGE AND APPROVED BY THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION: 0.32 LB/TON EXCLUDING SSM (30 DAY ROLLING AVERAGE) 25 PPMV

POLLUTANT NAME: Nitrous Oxide (N2O)

CAS Number: 10024-97-2

Test Method: Other

Other Test Method:

Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 90.0400 T/YR ROLLING 12 MONTH TOTAL

Emission Limit 2: 30.0000 PPMV ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP , OTHER
Control Method: (A) TERTIARY CATALYTIC REDUCTION
Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: CEMS TO VERIFY COMPLIANCE THIS SOURCE CONTAINS THE FOLLOWING INTERIM LIMITS DURING THE FIRST 12 MONTHS OF OPERATION AS ASSIGNED BY THE ADMINISTRATIVE LAW JUDGE AND APPROVED BY THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION: 228.10 TPY (ROLLING 12 MONTHS) 76 PPMV (ROLLING 12 MONTHS)

POLLUTANT NAME: Ammonia (NH3)
CAS Number: 7664-41-7
Test Method: EPA/OAR Cond. Test Mthd 027
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6400 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 11.5400 T/YR ROLLING 12 MONTH TOTAL
Standard Emission: 10.0000 PPMV ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OTHER
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLANCE THIS SOURCE CONTAINS THE FOLLOWING INTERIM LIMITS DURING THE FIRST 12 MONTHS OF OPERATION AS ASSIGNED BY THE ADMINISTRATIVE LAW JUDGE AND APPROVED BY THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION: 5.28 LB/HR (ROLLING 3 HOUR AVERAGE) 22.08 TPY (ROLLING 12 MONTH AVERAGE) 20 PPMV (ROLLING 12 MONTH AVERAGE)

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):

Emission Limit 1: %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP , OTHER
Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR) FOR NOX
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 6371.5000 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 27911.3000 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA PLANT PRIMARY REFORMER
Process Type: 61.012 (Fertilizer Production (except 61.009))

Primary Fuel: NATURAL GAS

Throughput: 1400.00 T/D AMMONIA

Process Notes: 824 MMBTU/HR

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1: %

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OTHER

Control Method: (P) GOOD AND EFFICIENT COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: EPA/OAR Mthd 6C

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.6100 LB/H ROLLING 3 HOUR AVERAGE

Emission Limit 2: 0.4400 T/YR ROLLING 12 MONTH AVERAGE

Standard Emission: 0.0007 LB/MMBTU ROLLING 3 HOUR AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP

Control Method: (P) GOOD AND EFFICIENT COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 1.1500 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 5.0500 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0014 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 15.9900 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 70.0200 T/YR ROLLING 12 MONTH TOTAL
Standard Emission: 0.0194 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Other
Other Test Method:
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0124 LB/MMBTU ROLLING 30 DAY AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP , OTHER
Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: CEMS TO VERIFY COMPLIANCE THIS LIMIT WAS ASSIGNED BY THE ADMINISTRATIVE LAW JUDGE AND LATER APPROVED BY THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION. THE ORIGINAL LIMIT AS PROPOSED BY THE FACILITY WAS 0.0124 LB/MMBTU (ROLLING 3 HOUR AVERAGE).

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 117.0000 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: EPA/OAR Mthd 18
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0022 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: EPA/OAR Mthd 320
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0002 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE ASTM D6348-03 OR EQUIVALENT METHOD MAY BE USED IN LEIU OF EPA METHOD 320

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 96737.6000 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 423714.2000 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA PLANT CONDENSATE STEAM STRIPPER
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 1400.00 T/D AMMONIA PRODUCTION
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.8300 LB/H ROLLING 24 HOUR AVERAGE
Emission Limit 2: 25.5500 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.1000 LB/TON ROLLING 24 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 396.6400 LB/H ROLLING 24 HOUR AVERAGE
Emission Limit 2: 6.8000 LB/TON ROLLING 24 HOUR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 396.7000 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 1737.4000 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA PLANT CO2 REGENERATOR
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 1400.00 T/D AMMONIA PRODUCTION
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 33.6400 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 147.3500 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.1060 LB/TON ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP

Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 1.1700 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 5.1100 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 146262.6000 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 640669.2000 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 2507.5000 LB/TON ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 146262.6000 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 640669.2000 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA PLANT AMMONIA VENT FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 0.26 MMBTU/H
Process Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE

Test Method: EPA/OAR Mthd 22
Pollutant Group(s):
Emission Limit 1: %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0008 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0034 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0007 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC

Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0057 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0250 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0054 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0870 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.3800 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0820 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 792.0300 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 6.9000 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0980 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 117.0000 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8

Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0022 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0002 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e

Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 719.9000 T/YR ROLLING 12 MONTH AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA PLANT PROCESS SSM FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 0.05 MMBTU/H
Process Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 22
Pollutant Group(s):
Emission Limit 1: %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0007 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0031 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0007 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0051 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0230 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0054 LB/MMBTU
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 156.1000 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 39.3600 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0820 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0930 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.4100 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0980 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 117.0000 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0022 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICE

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0002 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 5179.8000 T/YR ROLLING 12 MONTH AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA STORAGE FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 0.05 MMBTU/H
Process Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 22
Pollutant Group(s):
Emission Limit 1: %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.0001 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0006 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0006 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0011 LB/H ROLLINIG 3 HOUR AVERAGE
Emission Limit 2: 0.0041 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0054 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0170 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0630 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0820 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 10.0200 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 43.8800 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0980 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified

Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 117.0000 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0022 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0002 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 89.9900 T/YR ROLLING 12 MONTH AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA PLANT START-UP HEATER

Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: NATURAL GAS

Throughput: 38.00 MMBTU/H

Process Notes:

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1: %

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP , OTHER

Control Method: (P) GOOD COMBUSTION PRACTICE

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)

CAS Number: 7446-09-5

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))

Emission Limit 1: 0.0300 LB/H ROLLING 3 HOUR AVERAGE

Emission Limit 2: 0.0070 T/YR ROLLING 12 MONTH AVERAGE

Standard Emission: 0.0007 LB/MMBTU ROLLING 3 HOUR AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: SIP

Control Method: (P) GOOD COMBUSTION PRACTICE

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1900 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0480 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0020 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.7600 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.1900 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0100 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.2800 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.5700 T/YR ROLLING 12 MONTH AVERAGE
Standard Emission: 0.0600 LB/MMBTU ROLLING 3 HOUR AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD COMBUSTION PRACTICE
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 117.0000 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0022 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0002 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 1115.3100 T/YR ROLLING 12 MONTH AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: START-UP BOILER
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: NATURAL GAS
Throughput: 240.00 MMBTU/H
Process Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):

Emission Limit 1: %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Sulfur Dioxide (SO2)
CAS Number: 7446-09-5
Test Method: EPA/OAR Mthd 6C
Pollutant Group(s): (InOrganic Compounds , Oxides of Sulfur (SOx))
Emission Limit 1: 0.1800 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0007 LB/MMBTU ROLLING 3 HOUR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.9600 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0040 LB/MMBTU ROLLING 3 HOUR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 8.8800 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0370 LB/MMBTU ROLLING 3 HOUR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD AND EFFICIENT OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 4.3200 LB/H ROLLING 3 HOUR AVERAGE
Emission Limit 2: 0.0180 LB/MMBTU ROLLING 3 HOUR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) LOW NOX BURNERS AND FLUE GAS RECIRCULATION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PERIODIC STACK TESTING TO VERIFY COMPLIANCE

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 117.0000 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)

Emission Limit 1: 0.0022 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0002 LB/MMBTU ROLLING 3 HOUR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 123411.0000 T/YR ROLLING 12 MONTH AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: SIP
Control Method: (P) GOOD OPERATING PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Facility Information

RBLC ID: IN-0179 (final)
Date Determination Last Updated: 05/04/2016
Corporate/Company Name: OHIO VALLEY RESOURCES, LLC
Permit Number: 147-32322-00062
Facility Name: OHIO VALLEY RESOURCES, LLC
Permit Date: 09/25/2013 (actual)
Facility Contact: DOUG WILSON 6185990015
FRS Number: 110055148273
Facility Description: NITROGENOUS FERTILIZER PRODUCTION PLANT
SIC Code: 2873
Permit Type: A: New/Greenfield Facility
NAICS Code: 325311
Permit URL: HTTP://PERMITS.AIR.IDEM.IN.GOV/32322F.PDF
EPA Region: 5
COUNTRY: USA
Facility County: SPENCER
Facility State: IN
Facility ZIP Code: 47635
Permit Issued By: INDIANA DEPT OF ENV MGMT, OFC OF AIR (Agency Name)
MR. MATT STUCKEY(Agency Contact) (317) 233-0203 mstuckey@idem.in.gov
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Permit Notes:

Process/Pollutant Information

PROCESS NAME: FOUR (4) NATURAL GAS-FIRED BOILERS

Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: NATURAL GAS

Throughput: 218.00 MMBTU/HR, EACH

Process Notes: FUEL INPUT TO ALL FOUR BOILERS SHALL NOT EXCEED 2,802 MMCF/YEAR

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 20.4000 LB/MMCF 24-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) ULTRA LOW NOX BURNERS FLUE GAS RECIRCULATION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 37.2200 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 59.6100 TONS/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION; ENERGY EFFICIENT DESIGN: AIR INLET CONTROLS, HEAT RECOVERY, CONDENSATE RECOVERY AND BLOWDOWN HEAT RECOVERY

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: MUST ACHIEVE A THERMAL EFFICIENCY OF 80% BASED ON THE HIGHER HEATING VALUE.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) PROPER DESIGN AND GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: PRIMARY REFORMER

Process Type: 61.012 (Fertilizer Production (except 61.009))

Primary Fuel: NATURAL GAS

Throughput: 1006.40 MMBTU/H

Process Notes: NOX CEMS

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 9.0000 PPMVD 30 DAY ROLLING AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) SELECTIVE CATALYTIC REDUCTION (SCR) AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NOX CEMS

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 43.4500 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5100 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 59.6100 TONS/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES; PROPER DESIGN: AIR INLET CONTROLS, AND FLUE GAS HEAT RECOVERY.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: MUST ACHIEVE A THERMAL EFFICIENCY OF 90% BASED ON THE HIGHER HEATING VALUE CO2 EMISSIONS SHALL NOT EXCEED 515,246 TONS PER YEAR.

Process/Pollutant Information

PROCESS NAME: CO2 PURIFICATION PROCESS
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 3570.00 TON CO2 PER DAY
Process Notes: AMMONIA PRODUCTION LIMITED TO 1,022,000 TONS PER YEAR.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0117 LB/TON OF AMMONIA 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (B) PROCESS CATALYST AND GOOD OPERATIONAL PROCEDURES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0558 LB/TON AMMONIA 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) LOW VOC CATALYST
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9

Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 1.2750 TON CO2/TON AMMONIA 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATIONAL PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FRONT END PROCESS FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS PILOT
Throughput: 0.25 MMBTU/H
Process Notes: HEAT INPUT IS FOR NATURAL GAS PILOT ONLY. SSM EMISSIONS ARE CONTROLLED BY THE FLARE AND ARE LIMITED TO 336 HOURS OF VENTING PER YEAR.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 3240.1600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HR PER YEAR.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 47.2600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS FOR PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HR PER YEAR.

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 511.8000 TON/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HOURS PER YEAR.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBUT 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS FOR PILOT FLARE, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO ADDITIONAL PM EMISSIONS DURING VENTING EVENTS

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) NATURAL GAS FOR PILOT, AND FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO ADDITIONAL PM10 EMISSIONS DURING VENTING EVENTS

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS FOR PILOT, USE FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 595.4700 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING HOURS LIMITED TO 336 PER YEAR.

Process/Pollutant Information

PROCESS NAME: AMMONIA CATALYST STARTUP HEATER
Process Type: 12.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)
Primary Fuel: NATURAL GAS
Throughput: 106.30 MMBTU/H
Process Notes: ANNUAL NATURAL GAS USAGE LIMITED TO 20.84 MMCF.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.9000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS COMBUSTION ONLY, PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS COMBUSTION ONLY, PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 7.6000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS COMBUSTION ONLY, PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 183.7000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS COMBUSTION ONLY, PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE TYPICALLY CONSIDERED NOT FEASIBLE FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 37.2300 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS COMBUSTION ONLY, PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROL TYPICALLY CONSIDERED NOT FEASIBLE FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 5.5000 LB/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS COMBUSTION ONLY, PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS TYPICALLY CONSIDERED NOT FEASIBLE ON LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 59.6100 TON/MMCF 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS COMBUSTION ONLY, PROPER DESIGN AND GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: BACK END AMMONIA FLARE

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: NATURAL GAS

Throughput: 0.25 MMBTU/H

Process Notes: HEAT INPUT IS FOR PILOT ONLY. SSM EMISSIONS ARE CONTROLLED BY THE FLARE AND ARE LIMITED TO 336 HR/YR.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NO ADDITIONAL PM IS ANTICIPATED DURING SSM VENTING.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO ADDITIONAL EMISSIONS FOR SSM EVENTS.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 624.9400 LB/H, SSM EVENTS 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM EVENTS LIMITED TO 336 HRS PER YEAR

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 804.7600 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HR PER YEAR.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 11.7300 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HR PER YEAR.

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 127.1200 TON/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HR PER YEAR.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA STORAGE FLARE
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: NATURAL GAS
Throughput: 0.13 MMBTU/H
Process Notes: HEAT INPUT IS FOR PILOT ONLY. SSM EVENTS HAVE SEPARATE LIMITS. SSM VENTING IS LIMITED TO 168 HOURS PER YEAR.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 168 HR PER YEAR.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM EVENTS ARE LIMITED TO 168 HR PER YEAR.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 168 HR PER YEAR.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 125.0000 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING IS LIMITED TO 168 HR PER YEAR.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM EMISSIONS LIMITED TO 168 HR PER YEAR.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 168 HR PER YEAR.

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 52.0200 LB/H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TWO (2) NITRIC ACID UNITS
Process Type: 62.014 (Nitric Acid Plants)
Primary Fuel:
Throughput: 630.00 TONS NITRIC ACID/DAY, EACH
Process Notes: COMBINED NITRIC ACID PRODUCTION FROM BOTH PLANTS IS LIMITED TO 459,900 TONS OF 100% NITRIC ACID PER YEAR.

POLLUTANT NAME: Nitrous Oxide (N2O)

CAS Number: 10024-97-2
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 1.0500 LB/TON 100% ACID 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) CATALYTIC DECOMPOSITION
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.5000 LB/TON 100% ACID 30 DAY AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TWO (2) AMMONIUM NITRATE UNITS
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 798.00 TON AN PER DAY, EACH
Process Notes: UAN PRODUCTION IS LIMITED TO 1,314,000 TONS PER YEAR.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0128 LB/TON OF UAN 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) WET SCRUBBER WITH HIGH EFFICIENCY DEMISTER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0128 LB/TON UAN 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) WET SCRUBBER WITH HIGH EFFICIENCY DEMISTER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0128 LB/TON UAN 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) WET SCRUBBER WITH HIGH EFFICIENCY DEMISTER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 132.3100 LB/TON UAN 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD OPERATIONAL PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: LIQUID UAN LOADOUT

Process Type: 42.010 (Volatile Organic Liquid Marketing (except 42.009))

Primary Fuel:

Throughput: 1314000.00 TONS UAN PER YEAR

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) SUBMERGED FILL AND CLEAN CARGO CARRIER OPERATION

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: UAN PLANT VENT FLARE

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0.19 MMBTU/H

Process Notes: HEAT INPUT IS FOR NATUAL GAS PILOT. SSM EMISSIONS HAVE SEPARATE LIMITS. SSM VENTING LIMITED TO 336 HOURS PER YEAR.

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0019 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING IS LIMITED TO 336 HR PER YEAR.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0075 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0680 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 332.0800 LB/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HR PER YEAR.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.3700 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0054 LB/MMBTU 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 116.8900 LB/MMBTU 3-HR AVERAGE
Emission Limit 2: 5.5900 TON/H, SSM VENTING 3-HR AVERAGE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: SSM VENTING LIMITED TO 336 HR PER YEAR.

Process/Pollutant Information

PROCESS NAME: TWO (2) UAN STORAGE TANKS
Process Type: 42.009 (Volatile Organic Liquid Storage)
Primary Fuel:
Throughput: 30000.00 TONS UAN, EACH
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) WHITE TANK SHELLS, USE SUBMERGED FILL.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: THREE (3) UAN DAY TANKS
Process Type: 42.009 (Volatile Organic Liquid Storage)
Primary Fuel:
Throughput: 750.00 TONS UAN, EACH
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) WHITE TANK SHELLS, SUBMERGED FILL
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: ONE (1) DIESEL EXHAUST FLUID (DEF) TANK

Process Type: 42.009 (Volatile Organic Liquid Storage)

Primary Fuel:

Throughput: 100.00 TONS UAN

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) WHITE TANK SHELL, SUBMERGED FILL

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: ONE (1) DIESEL EXHAUST FLUID (DEF) TRUCK LOADOUT

Process Type: 42.010 (Volatile Organic Liquid Marketing (except 42.009))

Primary Fuel:

Throughput: 1314000.00 TONS UAN PER YEAR

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) USE OF SUBMERGED FILL
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: TWO (2) NITRIC ACID STORAGE TANKS
Process Type: 62.014 (Nitric Acid Plants)
Primary Fuel:
Throughput: 806842.00 TONS OF 57% ACID PER YEAR.
Process Notes: PERMIT LIMITS NITRIC ACID THROUGHPUT TO 806,842 TONS OF 57% ACID PER YEAR.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0015 LB NOX/TON 57% ACID 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) SUBMERGED FILL
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: DIESEL-FIRED EMERGENCY GENERATOR
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: NO. 2 FUEL OIL
Throughput: 4690.00 B-HP
Process Notes: ANNUAL HOURS OF OPERATION NOT TO EXCEED 200 HOURS.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 LB/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102

Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 4.4600 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6100 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC

Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3100 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 526.3900 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

Process/Pollutant Information

PROCESS NAME: DIESEL-FIRED EMERGENCY WATER PUMP

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: NO. 2 FUEL OIL

Throughput: 481.00 BHP

Process Notes: ANNUAL OPERATION LIMITED TO 200 HR,

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1500 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.8600 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.6000 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1410 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: Unspecified
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 527.4000 G/B-HP-H 3-HR AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.

Process/Pollutant Information

PROCESS NAME: TWO (2) COOLING TOWERS
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 179720.00 GPM, COMBINED
Process Notes: ONE UNIT IS EIGHT CELL, THE OTHER IS SIX CELL.

POLLUTANT NAME: Particulate matter, filterable (FPM)
CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 % DRIFT CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 4592 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: TOWERS USE ONSITE WELL WATER. IT IS HAS HIGHER THAN NORMAL TDS. COST EFFECTIVENESS BASED ON REDUCTION OF TDS FROM 2,000 MG/L TO 1,500 MG/L. ADVERSE ENVIRONMENTAL IMPACTS WERE CONSIDERED.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 % DRIFT CONTINUOUS
Emission Limit 2: 2000.0000 MG/L TDS CONTINUOUS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 4592 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: TOWERS USE ONSITE WELL WATER. IT IS HAS HIGHER THAN NORMAL TDS. COST EFFECTIVENESS BASED ON REDUCTION OF TDS FROM 2,000 MG/L TO 1,500 MG/L. ADVERSE ENVIRONMENTAL IMPACTS WERE CONSIDERED.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0005 % DRIFT CONTINUOUS

Emission Limit 2: 2000.0000 MG/L CONTINUOUS

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) HIGH EFFICIENCY DRIFT ELIMINATORS

Est. % Efficiency:

Cost Effectiveness: 4592 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: TOWERS USE ONSITE WELL WATER. IT IS HAS HIGHER THAN NORMAL TDS. COST EFFECTIVENESS BASED ON REDUCTION OF TDS FROM 2,000 MG/L TO 1,500 MG/L. ADVERSE ENVIRONMENTAL IMPACTS WERE CONSIDERED.

Process/Pollutant Information

PROCESS NAME: PAVED ROADWAYS AND PARKING LOTS WITH PUBLIC ACCESS

Process Type: 99.140 (Paved Roads)

Primary Fuel:

Throughput: 17160.00 VEHICLE MILES TRAVELED

Process Notes:

POLLUTANT NAME: Particulate matter, filterable (FPM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 90.0000 % CONTROL CONTINUOUS

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) PAVE ALL PLANT HAUL ROADS, DAILY SWEEPING AND WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL

Est. % Efficiency: 90.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 90.0000 % CONTROL CONTINUOUS

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) PAVE ALL PLANT HAUL ROADS, DAILY SWEEPING AND WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL

Est. % Efficiency: 90.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 90.0000 % CONTROL CONTINUOUS

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) PAVE ALL PLANT HAUL ROADS, DAILY SWEEPING AND WET SUPPRESSION, PROMPT CLEANUP OF ANY SPILLED MATERIAL

Est. % Efficiency: 90.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: FUGITIVE VOC EMISSIONS

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) USE OF A LEAK DETECTION AND REPAIR (LDAR) PROGRAM USING 40 CFR 60, SUBPART VVA PROCEDURES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID:	LA-0272 (final)	**Date Determination Last Updated:**	05/04/2016
Corporate/Company Name:	DYNO NOBEL LOUISIANA AMMONIA, LLC	**Permit Number:**	PSD-LA-768
Facility Name:	AMMONIA PRODUCTION FACILITY	**Permit Date:**	03/27/2013 (actual)
Facility Contact:	BARBARA CABOT (307) 771-5644 BARBARA.CABOT@AM.DYNONOBEL.COM	**FRS Number:**	Unknown
Facility Description:	2780 TON PER DAY AMMONIA PRODUCTION FACILITY	**SIC Code:**	2873
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325311
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	JEFFERSON		
Facility State:	LA		
Facility ZIP Code:	70094		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Other Agency Contact Info:	PERMIT WRITER: DASHENG "VICTOR" CHU, (225) 219-3417		
Permit Notes:	COMPLETE APPLICATION DATE = DATE OF ADMINISTRATIVE COMPLETENESS PSD-LA-768(M-1), ISSUED OCTOBER 14, 2013, CORRECTED THE CAPACITY OF THE AMDEA TANK (2009-F), REVISED THE EMISSION LIMITATIONS FOR THE AMMONIA STORAGE FLARE (2202-B), AND ADDED STARTUP EMISSIONS ATTRIBUTED TO THIS FLARE TO THE PERMIT. THESE CHANGES ARE REFLECTED IN THIS RBLC ENTRY.		

Process/Pollutant Information

PROCESS NAME: PRIMARY REFORMER FURNACE (101-B)
Process Type: 11.390 (Other Gaseous Fuel & Gaseous Fuel Mixtures)
Primary Fuel: NATURAL GAS
Throughput: 956.20 MM BTU/HR

Process Notes: NATURAL GAS: 613.5 MM BTU/HR PURIFIER WASTE GAS: 326.1 MM BTU/HR HIGH PRESSURE FLASH GAS: 10.4 MM BTU/HR LP SCRUBBER OVERHEAD: 6.2 MM BTU/HR

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 8.5500 LB/H HOURLY MAXIMUM
Emission Limit 2: 31.2100 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 8.5500 LB/H HOURLY MAXIMUM
Emission Limit 2: 31.2100 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 16.1500 LB/H HOURLY MAXIMUM
Emission Limit 2: 58.9600 T/YR ANNUAL MAXIMUM
Standard Emission: 0.0140 LB/MM BTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (A) SELECTIVE CATALYTIC REDUCTION (SCR) AND LOW NOX BURNERS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 49.1600 LB/H HOURLY MAXIMUM
Emission Limit 2: 179.4300 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 6.1900 LB/H HOURLY MAXIMUM
Emission Limit 2: 22.5800 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 490025.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Energy efficiency measures: process integration and improved combustion measures (i.e., combustion tuning, optimization using parametric testing, installation of advanced digital instrumentation).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: AMMONIA START-UP HEATER (102-B)

Process Type: 13.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: NATURAL GAS

Throughput: 59.40 MM BTU/HR

Process Notes: HEATER IS PERMITTED TO OPERATE 500 HOURS PER YEAR.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.5300 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.1100 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: HEATER IS PERMITTED TO OPERATE 500 HOURS PER YEAR.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.5300 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.1100 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: HEATER IS PERMITTED TO OPERATE 500 HOURS PER YEAR.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 14.6500 LB/H HOURLY MAXIMUM

Emission Limit 2: 3.0500 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: HEATER IS PERMITTED TO OPERATE 500 HOURS PER YEAR.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 2.9700 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.6200 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: HEATER IS PERMITTED TO OPERATE 500 HOURS PER YEAR.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3800 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.0800 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: HEATER IS PERMITTED TO OPERATE 500 HOURS PER YEAR.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 1738.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Energy efficiency measures: use of economizers and boiler insulation; improved combustion measures (i.e., tuning, optimization, and instrumentation); and minimization of air infiltration.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: HEATER IS PERMITTED TO OPERATE 500 HOURS PER YEAR.

Process/Pollutant Information

PROCESS NAME: CO2 STRIPPER VENT (102-E)

Process Type: 62.999 (Other Inorganic Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 115.83 TONS/HR

Process Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 1.4900 LB/H HOURLY MAXIMUM

Emission Limit 2: 6.5400 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) MAXIMIZATION OF THE SHIFT CONVERSION EFFICIENCY AND GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 21.7800 LB/H HOURLY MAXIMUM

Emission Limit 2: 95.3800 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 1280000.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) IMPROVED SOLVENTS TO MINIMIZE ENERGY USED TO CIRCULATE AND REGENERATE SOLVENT; ENERGY EFFICIENCY MEASURES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: COOLING TOWER (2101-U)
Process Type: 99.009 (Industrial Process Cooling Towers)
Primary Fuel:
Throughput: 93467.00 GAL/MIN
Process Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3400 LB/H HOURLY MAXIMUM
Emission Limit 2: 1.2300 T/YR ANNUAL MAXIMUM
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) HIGH EFFICIENCY DRIFT ELIMINATORS TO CONTROL DRIFT TO NO MORE THAN 0.0005%.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5600 LB/H HOURLY MAXIMUM
Emission Limit 2: 2.0500 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) HIGH EFFICIENCY DRIFT ELIMINATORS TO CONTROL DRIFT TO NO MORE THAN 0.0005%.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: COMMISSIONING BOILERS 1 & 2 (CB-1 & CB-2)
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: NATURAL GAS
Throughput: 217.50 MM BTU/HR

Process Notes: COMMISSIONING BOILERS ARE PERMITTED TO OPERATE FOR 4400 HOURS EACH. Boilers meet the definition of "temporary boiler" in 40 CFR 60.41b.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.9400 LB/H HOURLY MAXIMUM
Emission Limit 2: 3.5700 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: COMMISSIONING BOILERS ARE PERMITTED TO OPERATE FOR 4400 HOURS EACH. Boilers meet the definition of "temporary boiler" in 40 CFR 60.41b.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.9400 LB/H HOURLY MAXIMUM
Emission Limit 2: 3.5700 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: COMMISSIONING BOILERS ARE PERMITTED TO OPERATE FOR 4400 HOURS EACH. Boilers meet the definition of "temporary boiler" in 40 CFR 60.41b.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 11.9200 LB/H HOURLY MAXIMUM
Emission Limit 2: 21.8600 T/YR ANNUAL MAXIMUM
Standard Emission: 0.0500 LB/MM BTU ANNUAL AVERAGE
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (B) FLUE GAS RECIRCULATION, LOW NOX BURNERS, AND GOOD COMBUSTION PRACTICES (I.E., PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE).
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: COMMISSIONING BOILERS ARE PERMITTED TO OPERATE FOR 4400 HOURS EACH. Boilers meet the definition of "temporary boiler" in 40 CFR 60.41b.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 10.8700 LB/H HOURLY MAXIMUM
Emission Limit 2: 19.9300 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) GOOD COMBUSTION PRACTICES: PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: COMMISSIONING BOILERS ARE PERMITTED TO OPERATE FOR 4400 HOURS EACH. Boilers meet the definition of "temporary boiler" in 40 CFR 60.41b.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 1.4100 LB/H HOURLY MAXIMUM

Emission Limit 2: 2.5800 T/YR ANNUAL MAXIMUM

Standard Emission: 0.0054 LB/MM BTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (B) FLUE GAS RECIRCULATION AND GOOD COMBUSTION PRACTICES (I.E., PROPER DESIGN OF BURNER AND FIREBOX COMPONENTS; MAINTAINING THE PROPER AIR-TO-FUEL RATIO, RESIDENCE TIME, AND COMBUSTION ZONE TEMPERATURE).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: COMMISSIONING BOILERS ARE PERMITTED TO OPERATE FOR 4400 HOURS EACH. Boilers meet the definition of "temporary boiler" in 40 CFR 60.41b.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 55986.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) Energy efficiency measures: use of economizers and boiler insulation; improved combustion measures (i.e., tuning, optimization, and instrumentation); and minimization of air infiltration.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: COMMISSIONING BOILERS ARE PERMITTED TO OPERATE FOR 4400 HOURS EACH. Boilers meet the definition of "temporary boiler" in 40 CFR 60.41b.

Process/Pollutant Information

PROCESS NAME: EMERGENCY DIESEL GENERATOR (2205-B)

Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: DIESEL

Throughput: 1200.00 HP

Process Notes: OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission: 0.2000 G/KW-HR

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT , NSPS

Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; good combustion practices.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR.

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission: 0.2000 G/KW-HR
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; good combustion practices.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission: 6.4000 G/KW-HR NOX + NMHC
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; good combustion practices.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR. NOTE THAT THE 6.4 G/KW-HR LIMIT APPLIES TO NOX + NMHC CONSISTENT WITH 40 CFR 60 SUBPART IIII.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission: 3.5000 G/KW-HR
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS , OPERATING PERMIT
Control Method: (P) Compliance with 40 CFR 60 Subpart IIII; good combustion practices.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission: 6.4000 G/KW-HR NOX + NMHC
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT

Control Method:	(P) Compliance with 40 CFR 60 Subpart IIII; good combustion practices.
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR. NOTE THAT THE 6.4 G/KW-HR LIMIT APPLIES TO NOX + NMHC CONSISTENT WITH 40 CFR 60 SUBPART IIII.

POLLUTANT NAME:	Carbon Dioxide Equivalent (CO2e)
CAS Number:	CO2e
Test Method:	Unspecified
Pollutant Group(s):	(Greenhouse Gasses (GHG))
Emission Limit 1:	
Emission Limit 2:	
Standard Emission:	

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	OPERATING PERMIT
Control Method:	(P) ENERGY EFFICIENCY MEASURES
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR. THE PSD PERMIT DOES NOT ESTABLISH MASS EMISSION LIMITS FOR CO2E EMISSIONS.

Process/Pollutant Information

PROCESS NAME:	AMDEA STORAGE TANK (2009-F)
Process Type:	42.009 (Volatile Organic Liquid Storage)
Primary Fuel:	
Throughput:	0
Process Notes:	395,000 GALLONS

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (N)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: THE PSD PERMIT DOES NOT ESTABLISH MASS EMISSION LIMITS FOR THE AMDEA STORAGE TANK. TANK EMITS ONLY 0.003 TPY VOC.

Process/Pollutant Information

PROCESS NAME: FUGITIVE EMISSIONS (FUG)

Process Type: 62.999 (Other Inorganic Chemical Manufacturing Sources)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: THE PSD PERMIT DOES NOT ESTABLISH MASS EMISSION LIMITS FOR FUGITIVE EMISSIONS. NO LDAR PROGRAM PRESCRIBED.

Process/Pollutant Information

PROCESS NAME: AMMONIA STORAGE FLARE (2202-B)
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel:
Throughput: 0
Process Notes: NATURAL GAS (PILOT): 0.25 MM BTU/HR VENT GAS: 14.94 MM BTU/HR

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0010 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.0050 TPY ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: STARTUP PM10 LIMITS ATTRIBUTED TO THIS FLARE (2202-B SU, EQT 0014): 0.029 LB/HR & 0.04 TPY.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0010 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0050 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: STARTUP PM2.5 LIMITS ATTRIBUTED TO THIS FLARE (2202-B SU, EQT 0014): 0.029 LB/HR & 0.04 TPY.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0400 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.1300 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: STARTUP NOX LIMITS ATTRIBUTED TO THIS FLARE (2202-B SU, EQT 0014): 30.99 LB/HR & 9.75 TPY.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.2000 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.7100 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: STARTUP CO LIMITS ATTRIBUTED TO THIS FLARE (2202-B SU, EQT 0014): 15.67 LB/HR & 2.19 TPY.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0030 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0100 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 290.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) ENERGY EFFICIENCY MEASURES (I.E., MINIMIZE THE AMOUNT OF GAS ROUTED TO THE FLARE).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: STARTUP CO2E LIMIT ATTRIBUTED TO THIS FLARE (2202-B SU, EQT 0014): 156 TPY.

Process/Pollutant Information

PROCESS NAME: FRONT END PROCESS FLARE (2203-B)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: NATURAL GAS (PILOT): 1.829 MM BTU/HR VENT GAS: 6782.433 MM BTU/HR

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0050 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0200 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0050 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0200 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.1500 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.5400 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.8100 LB/H HOURLY MAXIMUM

Emission Limit 2: 2.9600 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 1202.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) ENERGY EFFICIENCY MEASURES (I.E., MINIMIZE THE AMOUNT OF GAS ROUTED TO THE FLARE).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0100 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.0400 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

Process/Pollutant Information

PROCESS NAME: BACK END PROCESS FLARE (2204-B)
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel:
Throughput: 0
Process Notes: NATURAL GAS (PILOT): 1.829 MM BTU/HR VENT GAS: 8981.014 MM BTU/HR

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.0200 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0050 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0200 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.1500 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.5400 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.8100 LB/H HOURLY MAXIMUM

Emission Limit 2: 2.9600 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0100 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0400 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Unspecified

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 1202.0000 TPY ANNUAL MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) ENERGY EFFICIENCY MEASURES (I.E., MINIMIZE THE AMOUNT OF GAS ROUTED TO THE FLARE).

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: Mass limits in PSD permit exclude emissions associated with startup.

Process/Pollutant Information

PROCESS NAME: RAIL LOADING FLARE (2205-B)

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: 0.25 MM BTU/HR

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0010 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0030 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0010 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.0030 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0300 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.0800 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.1100 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.4000 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0010 LB/H HOURLY MAXIMUM

Emission Limit 2: 0.0100 T/YR ANNUAL MAXIMUM

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: OPERATING PERMIT

Control Method: (P) COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Unspecified
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 3990.0000 TPY ANNUAL MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: OPERATING PERMIT
Control Method: (P) ENERGY EFFICIENCY MEASURES (I.E., MINIMIZE THE AMOUNT OF GAS ROUTED TO THE FLARE).
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID: IA-0105 (final)
Date Determination Last Updated: 08/13/2013
Corporate/Company Name: IOWA FERTILIZER COMPANY
Permit Number: 12-219
Facility Name: IOWA FERTILIZER COMPANY
Permit Date: 10/26/2012 (actual)
Facility Contact: DAVE PEARSON (319) 246-2308 DAVE.PEARSON@IOWAFERTILIZERS.COM
FRS Number: 110054890392
Facility Description: NITROGENEOUS FERTILIZER MANUFACTURING
SIC Code: 2873
Permit Type: A: New/Greenfield Facility
NAICS Code: 325311

Permit URL:	https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp ,https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp ,https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp ,https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp ,https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp ,https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp ,https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp ,https://aqbweb.iowadnr.gov/airpermit/eepsdpermit.jsp
EPA Region:	7 **COUNTRY:** USA
Facility County:	LEE
Facility State:	IA
Facility ZIP Code:	52658
Permit Issued By:	IOWA DEPARTMENT OF NATURAL RESOURCES AIR QUALITY (Agency Name) MR. GARY SMITH(Agency Contact) (515) 725-9563 GARY.SMITH@DNR.IOWA.GOV
Other Agency Contact Info:	CHRISTOPHER A. ROLING, PE ENVIRONMENTAL ENGINEER SENIOR (515) 725-9557 CHRIS.ROLING@DNR.IOWA.GOV
Permit Notes:	THE PROJECT WAS AMENDED ON 3/13/14 DUE TO SOME DESIGN CHANGES WHICH INCLUDED ADDITIONAL EMISSION UNITS/POINTS. THE NEW PROJECT IS UNDER PROJECT NUMBER/PERMIT NUMBER 13-355

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	111.0000 (Tons/Year)
Nitrogen Oxides (NOx)	95.7000 (Tons/Year)
Particulate Matter (PM)	84.6000 (Tons/Year)
Sulfur Oxides (SOx)	3.3000 (Tons/Year)
Volatile Organic Compounds (VOC)	59.7000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME:	Primary Reformer
Process Type:	61.012 (Fertilizer Production (except 61.009))
Primary Fuel:	natural gas
Throughput:	1.13 million cubic feet/h
Process Notes:	

POLLUTANT NAME:	Particulate matter, total (TPM)
CAS Number:	PM
Test Method:	EPA/OAR Mthd 5 and 202
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	0.0024 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:	11.9000 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0024 LB/MMTU AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2: 11.9000 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)

CAS Number: PM

Test Method: EPA/OAR OTM 27 and Mthd 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0024 LB/MMBTU AVERAGE OF 3 TEST RUNS

Emission Limit 2: 11.9000 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: EPA/OAR Mthd 9

Pollutant Group(s):

Emission Limit 1: %

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good operation practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: EPA/OAR Mthd 7E

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 9.0000 PPMV 30 DAY ROLLING AVERAGE

Emission Limit 2: 56.0000 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Selective Catalytic Reduction (SCR)

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: EPA/OAR Mthd 25A

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0014 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2: 6.9500 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: EPA/OAR Mthd 10

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0194 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2: 96.3000 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9

Test Method: EPA/OAR Mthd 3A

Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 117.0000 LB/MMBTU ROLLING 30 DAY AVERAGE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Methane

CAS Number: 74-82-8

Test Method: EPA/OAR Mthd 18

Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)

Emission Limit 1: 0.0023 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)

CAS Number: 10024-97-2

Test Method: EPA/OAR Mthd 320

Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0006 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Other

Other Test Method: recordkeeping

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 596905.0000 TONS/YR ROLLING 12 MONTH TOTAL

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: CO2 Regenerator
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 3012.00 metric tons/day
Process Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1060 LB/TON OF AMMONIA AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 51.2000 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operational practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0200 LB/TON OF AMMONIA AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 9.6500 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operational practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 1.2600 TONS/TON OF AMMONIA ROLLING 30 DAY AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operational practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 1211847.0000 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operational practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Urea Ammonia Nitrate (UAN) Mixing Tank
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 0
Process Notes: The maximum capacity of the tank is 5,400 metric tons and it has an Acid Scrubber to control ammonia.

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 1.1000 LB/H AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operational practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 4.9200 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operational practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Urea Synthesis
Process Type: 61.012 (Fertilizer Production (except 61.009))

Primary Fuel:

Throughput: 2500.00 metric tons/day

Process Notes: There is an Acid Scrubber for ammonia control

POLLUTANT NAME: Carbon Dioxide

CAS Number: 124-38-9

Test Method: EPA/OAR Mthd 3A

Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 165.4000 LB/H AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good operational practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)

CAS Number: CO2e

Test Method: Other

Other Test Method: recordkeeping

Pollutant Group(s): (Greenhouse Gasses (GHG))

Emission Limit 1: 724.5000 TONS/YR ROLLING 12 MONTH TOTAL

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good operational practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Nitric Acid Plant
Process Type: 62.014 (Nitric Acid Plants)
Primary Fuel:
Throughput: 1905.00 metric tons/day
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 5.0000 PPMV ROLLING 30 DAY AVERAGE
Emission Limit 2: 30.0000 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) De-NOx system
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: EPA/OAR Mthd 320
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 30.0000 PPMV AVERAGE OF 3 TEST RUNS
Emission Limit 2: 98.0000 % REDUCTION AVERAGE OF 3 TEST RUNS
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) De-N2O system
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: EPA/OAR Mthd 18
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 40.0000 PPMV AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good operational practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping

Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 29543.0000 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) De-N2O system
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Nitric Acid Storage Tank
Process Type: 62.014 (Nitric Acid Plants)
Primary Fuel:
Throughput: 0
Process Notes: The maximum storage capacity of the tank is 1,935,773 gallons

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.7200 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Acid/Water Vent Lock
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Auxiliary Boiler
Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: natural gas
Throughput: 472.40 MMBTU/H
Process Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: EPA/OAR Mthd 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0024 LB/MMBTU AVERAGE OF 3 TEST RUNS
Emission Limit 2: 1.0600 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and Mthd 202
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0024 LB/MMBTU AVERAGE OF 3 TEST RUNS
Emission Limit 2: 1.0600 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0024 LB/MMBTU AVERAGE OF 3 TEST RUNS
Emission Limit 2: 1.0600 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):

Emission Limit 1: % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0125 LB/MMBTU ROLLING 30 DAY AVERAGE
Emission Limit 2: 5.5200 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Low NOx Burners (LNB) and Flue Gas Recirculation (FGR)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 0.0014 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.6200 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0013 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.5700 TON/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)

Emission Limit 1: 117.0000 LB/MMBTU ROLLING 30 DAY AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: EPA/OAR Mthd 18
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0023 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: EPA/OAR Mthd 320
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0006 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 51748.0000 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Ammonia Flare

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: natural gas

Throughput: 0.40 MMBTU/H

Process Notes: There are four (4) natural gas pilots

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: EPA/OAR Mthd 5 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) work practice/good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1:

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) work practice/good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 22
Pollutant Group(s):
Emission Limit 1: %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2
Test Method: EPA/OAR Mthd 320
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: EPA/OAR Mthd 18
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) work practice/good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permit.

Process/Pollutant Information

PROCESS NAME: Emergency Generator
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: diesel fuel
Throughput: 142.00 GAL/H
Process Notes: rated @ 2,000 KW

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: EPA/OAR Mthd 5 and 202

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.2200 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.2200 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.2200 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):
Emission Limit 1: 5.0000 % OPACITY 6 MINUTE AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: 20% opacity is allowed during periods of startup, shutdown, malfunction (SSM)

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 6.0000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 6.6100 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.4000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.4400 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10

Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 3.5000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 3.8600 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 788.5000 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9

Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 1.5500 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: EPA/OAR Mthd 18
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0001 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Fire Pump

Process Type: 17.210 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: diesel fuel

Throughput: 14.00 GAL/H

Process Notes: rated @ 235 KW

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2000 G/KW-H AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2: 0.0300 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: EPA/OAR Mthd 5 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.2000 G/KW-H AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2: 0.0300 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) good combustion practices

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.0300 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):
Emission Limit 1: 5.0000 % 6 MINUTE AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: standard is 20% during periods of startup, shutdown, and malfunction (SSM)

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 3.7500 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.4900 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.2500 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.0300 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 3.5000 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.4500 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9
Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 1.5500 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: EPA/OAR Mthd 18
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0001 G/KW-H AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 91.0000 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Startup Heater
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: Natural gas
Throughput: 110.12 MMBTU/H
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0024 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.0100 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM

Test Method: EPA/OAR Mthd 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0024 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.0100 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0024 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.0100 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE

Test Method: EPA/OAR Mthd 9
Pollutant Group(s):
Emission Limit 1: % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.0014 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.0100 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102

Test Method: EPA/OAR Mthd 7E
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.1190 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.6300 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: EPA/OAR Mthd 10
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0194 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 0.1000 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide
CAS Number: 124-38-9

Test Method: EPA/OAR Mthd 3A
Pollutant Group(s): (Acid Gasses/Mist , Greenhouse Gasses (GHG) , InOrganic Compounds)
Emission Limit 1: 117.0000 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Methane
CAS Number: 74-82-8
Test Method: EPA/OAR Mthd 18
Pollutant Group(s): (Greenhouse Gasses (GHG) , Organic Compounds (all) , Organic Non-HAP Compounds)
Emission Limit 1: 0.0023 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrous Oxide (N2O)
CAS Number: 10024-97-2

Test Method: EPA/OAR Mthd 320
Pollutant Group(s): (Greenhouse Gasses (GHG) , InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0006 LB/MMBTU AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Carbon Dioxide Equivalent (CO2e)
CAS Number: CO2e
Test Method: Other
Other Test Method: recordkeeping
Pollutant Group(s): (Greenhouse Gasses (GHG))
Emission Limit 1: 638.0000 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Urea Granulator

Process Type: 61.012 (Fertilizer Production (except 61.009))

Primary Fuel:

Throughput: 1500.00 metric tons/day

Process Notes:

POLLUTANT NAME: Particulate matter, total (TPM)

CAS Number: PM

Test Method: EPA/OAR Mthd 5 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1000 KG/METRIC TON AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2: 60.4000 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Wet Scrubber

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM

Test Method: EPA/OAR Mthd 201 and 202

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1000 KG/METRIC TON AVERAGE OF 3 STACK TEST RUNS

Emission Limit 2: 60.4000 TONS/YR ROLLING 12 MONTH TOTAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Wet Scrubber
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0250 KG/METRIC TON AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2: 15.1000 TONS/YR ROLLING 12 MONTH TOTAL
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Wet Scrubber
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):
Emission Limit 1: % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (A) wet scrubber
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Cooling Tower
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes: There are 2 cooling towers. One has 6 cells with a total flowrate of 74,040 gal/min and the other has 9 cells with a total flowrate of 111,060 gal/min

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: EPA/OAR Mthd 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) drift eliminator
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numerical emission limit. The drift eliminator is required to have a control efficiency of 0.0005%.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)

CAS Number: PM
Test Method: EPA/OAR Mthd 201 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) drift eliminator
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numerical emission limit. The drift eliminator is required to have a control efficiency of 0.0005%.

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):
Emission Limit 1: % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) drift eliminator
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)

CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0005 %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) drift eliminator
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numerical emission limit. The drift eliminator is required to have a control efficiency of 0.0005%.

Process/Pollutant Information

PROCESS NAME: Granulated Urea Transfer
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 1500.00 metric tons/day
Process Notes: There are six (6) different emission points. The transfer points are for the warehouse, train loading, and truck loading.

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: EPA/OAR Mthd 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (A) bin vent filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The ton/yr limit varies for each of the 6 emission points depending on the flowrate.

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0050 GR/DSCF AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) bin vent filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The ton/yr limit varies for each of the 6 emission points depending on the flowrate.

POLLUTANT NAME: Particulate matter, total < 2.5 µ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0013 GR/DSCF AVERAGE OF 3 STACK TEST RUNS
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (A) bin vent filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: The ton/yr limit varies for each of the 6 emission points depending on the flowrate.

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 9
Pollutant Group(s):
Emission Limit 1: % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) bin vent filter
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: MDEA storage tank
Process Type: 61.999 (Other Agricultural Chemical Manufacturing Sources)
Primary Fuel:
Throughput: 0
Process Notes: The storage tank capacity is 390,000 gallons

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC

Test Method: EPA/OAR Mthd 25A
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.1000 TONS/YR ROLLING 12 MONTH TOTAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) Nitrogen gas blanket
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Haul Roads
Process Type: 99.140 (Paved Roads)
Primary Fuel:
Throughput: 0
Process Notes: There are two (2) paved haul roads. The length of one is 0.97 miles and the other is 1.07 miles long.

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: EPA/OAR Mthd 5 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) paved road, water flushing, and sweeping

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permits.

POLLUTANT NAME: Particulate matter, total < 10 μ (TPM10)
CAS Number: PM
Test Method: EPA/OAR Mthd 201 and 202
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) paved road, water flushing, and sweeping
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There is no numeric emission limit in the permits.

POLLUTANT NAME: Particulate matter, total < 2.5 μ (TPM2.5)
CAS Number: PM
Test Method: EPA/OAR OTM 27 and 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) paved road, water flushing, and sweeping

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: There are no numeric emission limits in the permits.

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: EPA/OAR Mthd 22
Pollutant Group(s):
Emission Limit 1: % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) paved road, water flushing, and sweeping
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID: LA-0264 (final)
Date Determination Last Updated: 09/06/2013
Corporate/Company Name: AIR PRODUCTS AND CHEMICALS, INC.
Permit Number: PSD-LA-750(M1)
Facility Name: NORCO HYDROGEN PLANT
Permit Date: 09/04/2012 (actual)
Facility Contact: DAN DILLER 5042541590 DILLERDJ@AIRPRODUCTS.COM
FRS Number: 110000597140
Facility Description: A new hydrogen plant (SMR) which was previously propoposed by Valero (LA-0245)
SIC Code: 2813
Permit Type: A: New/Greenfield Facility
NAICS Code: 325120
Permit URL:

EPA Region:	6	**COUNTRY:**	USA
Facility County:	ST. CHARLES		
Facility State:	LA		
Facility ZIP Code:	70079		
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV		
Other Agency Contact Info:	Permit Writer: Dan Nguyen		
Permit Notes:			

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	82.4300 (Tons/Year)
Nitrogen Oxides (NOx)	80.9600 (Tons/Year)
Particulate Matter (PM)	44.4700 (Tons/Year)
Sulfur Oxides (SOx)	3.3100 (Tons/Year)
Volatile Organic Compounds (VOC)	30.6200 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: Reformer

Process Type: 11.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: fuel gas

Throughput: 1320.00 MMBTU/H

Process Notes: Supplement fuel: natural gas

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: EPA/OAR Mthd 7E

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 48.7400 LB/H HOURLY MAXIMUM

Emission Limit 2:

Standard Emission: 0.0150 LB/MMBTU ANNUAL AVERAGE

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) Ultra Low NOx Burners (ULNB) and SCR

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: EPA/OAR Mthd 5 and OTM 28
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 11.2400 LB/H HOURLY AVERAGE
Emission Limit 2:
Standard Emission: 0.0075 LB/MMBTU
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper equipment designs, good combustion practices, and gaseous fuel
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: PM = PM10 = PM2.5

Process/Pollutant Information

PROCESS NAME: Flare (EQT0003)
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: natural gas
Throughput: 0.31 MMBTU/H
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0300 LB/H HOURLY MAXIMUM
Emission Limit 2: 0.0900 T/YR ANNUAL MAXIMUM
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Proper Equipment designs and good combustion practices
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, total (TPM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0100 LB/H HOURLY MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Maintain minimum heat content of the flare gas at 200 btu/scf to ensure the flame at the flare tips at all the times.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: Cooling Tower (EQT0004)

Process Type:	99.009 (Industrial Process Cooling Towers)
Primary Fuel:	
Throughput:	11200.00 GAL/MIN
Process Notes:	

POLLUTANT NAME:	Particulate matter, total (TPM)
CAS Number:	PM
Test Method:	Unspecified
Pollutant Group(s):	(Particulate Matter (PM))
Emission Limit 1:	0.7800 LB/H HOURLY MAXIMUM
Emission Limit 2:	
Standard Emission:	0.0010 PERCENT DRIFT RATE MAXIMUM

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	
Control Method:	(P) Drift eliminators
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	PM = PM10 = PM2.5

Facility Information

RBLC ID:	LA-0244 (final)	**Date Determination Last Updated:**	07/06/2011
Corporate/Company Name:	SASOL NORTH AMERICA, INC.	**Permit Number:**	PSD-LA-291(M3)
Facility Name:	LAKE CHARLES CHEMICAL COMPLEX - LAB UNIT	**Permit Date:**	11/29/2010 (actual)
Facility Contact:	MAGGIE PAGELS 337-494-5769 MARGARET.PAGELS@US.SASOL.COM	**FRS Number:**	110017418061
Facility Description:	Chemical Production Unit for Linear Alkyl Benzene (LAB)production.	**SIC Code:**	2869
Permit Type:	C: Modify process at existing facility	**NAICS Code:**	325110
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA

Facility County:	CALCASIEU
Facility State:	LA
Facility ZIP Code:	70669
Permit Issued By:	LOUISIANA DEPARTMENT OF ENV QUALITY (Agency Name) MR. BRYAN D. JOHNSTON(Agency Contact) (225)219-3450 BRYAN.JOHNSTON@LA.GOV
Other Agency Contact Info:	Permit Writer: Dan Nguyen (225) 219-3395
Permit Notes:	Modification to an existing PSD Permit (PSD-LA-291(M2), dated October 18, 1988) to increase operating time of the heater. Emissions will not be increased above the permitted limits. Existing BACT will not be revised.

Process/Pollutant Information

PROCESS NAME:	EQT0026 - LAB Unit Flare LF-1
Process Type:	19.310 (Chemical Plant Flares)
Primary Fuel:	Natural Gas
Throughput:	0
Process Notes:	

POLLUTANT NAME:	Nitrogen Oxides (NOx)
CAS Number:	10102
Test Method:	Unspecified
Pollutant Group(s):	(InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:	10.2300 LB/H HOURLY MAXIMUM
Emission Limit 2:	
Standard Emission:	
Did factors, other then air pollution technology considerations influence the BACT decisions:	U
Case-by-Case Basis:	BACT-PSD
Other Applicable Requirements:	
Control Method:	(P) Steam Assisted
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT was determined in 1983

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3700 LB/H HOURLY MAXIMUM
Emission Limit 2: % OPACITY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) Steam assisted
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT was determined in 1983

Process/Pollutant Information

PROCESS NAME: EQT0027 - PACOL CHARGE HEATER H-201
Process Type: 13.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: Natural Gas
Throughput: 87.30 MMBTU/H
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 7.1500 LB/H HOURLY MAXIMUM
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (P) Low NOX Burners
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT was determined in 1983

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.8600 LB/H HOURLY MAXIMUM
Emission Limit 2: % OPACITY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT was determined in 1983

Process/Pollutant Information

PROCESS NAME: EQT0028 - PACOL STARTUP HEATER H-202
Process Type: 13.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: natural gas
Throughput: 21.00 MMBTU/H
Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2100 LB/H HOURLY MAXIMUM
Emission Limit 2: % OPACITY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) No additional Control
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT was determined in 1983

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 2.7100 LB/H HOURLY MAXIMUM
Emission Limit 2: % OPACITY
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) low nox burners
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: BACT was determined in 1983

Process/Pollutant Information

PROCESS NAME: EQT0029 - Hot Oil Heater H-601

Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: natural gas

Throughput: 170.00 MMBTU/H

Process Notes:

POLLUTANT NAME: Particulate matter, total < 10 µ (TPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.7100 LB/H HOURLY MAXIMUM

Emission Limit 2: % OPACITY

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) No additional control

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: BACT was determined in 1983

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 19.6900 LB/H HOURLY MAXIMUM

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method:	(P) low nox burners
Est. % Efficiency:	
Cost Effectiveness:	0 $/ton
Incremental Cost Effectiveness:	0 $/ton
Compliance Verified:	Unknown
Pollutant/Compliance Notes:	BACT was determined in 1983

Facility Information

RBLC ID:	TX-0575 (final)	**Date Determination Last Updated:**	05/12/2016
Corporate/Company Name:	SABINA PETROCHEMICALS LLC	**Permit Number:**	41945, N018M1
Facility Name:	SABINA PETROCHEMICALS LLC	**Permit Date:**	08/20/2010 (actual)
Facility Contact:	4099605000 CHRISTOPHER.WITTE@BASF.COM	**FRS Number:**	110006134691
Facility Description:	C4 OLEFINS COMPLEX BRIEF PLANT DESCRIPTION/NARRATIVE (FOR EXAMPLE - CHEMICAL PLANT, STEEL MILL, PAINT MANUFACTURING, ETC.): C4 OLEFINS COMPLEX BRIEF EMISSION SOURCE(S) DESCRIPTION (FOR EXAMPLE - BOILER, PAINT SPRAY BOOTH, FURNACE, ETC.): STORM WATER TANK, COOLING TOWER, FUGITIVES, TANK TRUCK LOADING , AND ABOILER, TYPE(S) OF FUEL USED AT THIS FACILITY: DESCRIPTION OF THE POLLUTION ABATEMENT STRATEGY (FOR EXAMPLE - FABRIC FILTER, ESP, CARBON ADSORBERS, POWDER COATINGS, ETC.): HIGH AND LOW-PRESSURE FLARES, AND AN AMMONIA SCRUBBER FACILITY NOTES: THE FACILITY INCLUDES A BUTADIENE UNIT WITH A MAXIMUM CAPACITY OF 1 BILLION POUNDS PER YEAR OF BUTADIENE, AN ALKYLATE (MIXTURE OF OCTANES) UNIT (REFERRED TO AS INALK UNIT) WITH A MAXIMUM CAPACITY OF 1 BILLION POUNDS PER YEAR OF ALKYLATE, AND ANCILLARY SUPPORT EQUIPMENT.	**SIC Code:**	2869
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	325199
Permit URL:			
EPA Region:	6	**COUNTRY:**	USA
Facility County:	JEFFERSON		
Facility State:	TX		
Facility ZIP Code:			
Permit Issued By:	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (Agency Name) MICHAEL PARTEE(Agency Contact) (512) 239-3312 michael.partee@tceq.texas.gov		

Other Agency Contact Info:
AGENCY CONTACT: DANIEL A. SMOTHERS
TELEPHONE NUMBER: (512) 239-1664 FAX:
E-MAIL ADDRESS:DSMOTHER@TCEQ.STATE.TX.US
ADDRESS: OFFICE OF PERMITTING AND REGISTRATION
AIR PERMITS DIVISION, MC-163, P.O. BOX 13087
CITY: AUSTIN STATE: TEXAS ZIP CODE: 78711-3087

Permit Notes:
BRIEF PLANT DESCRIPTION/NARRATIVE (FOR EXAMPLE - CHEMICAL PLANT, STEEL MILL, PAINT MANUFACTURING, ETC.): C4 OLEFINS COMPLEX BRIEF EMISSION SOURCE(S) DESCRIPTION (FOR EXAMPLE - BOILER, PAINT SPRAY BOOTH, FURNACE, ETC.): STORM WATER TANK, COOLING TOWER, FUGITIVES, TANK TRUCK LOADING , AND ABOILER, TYPE(S) OF FUEL USED AT THIS FACILITY: DESCRIPTION OF THE POLLUTION ABATEMENT STRATEGY (FOR EXAMPLE - FABRIC FILTER, ESP, CARBON ADSORBERS, POWDER COATINGS, ETC.): HIGH AND LOW-PRESSURE FLARES, AND AN AMMONIA SCRUBBER FACILITY NOTES: THE FACILITY INCLUDES A BUTADIENE UNIT WITH A MAXIMUM CAPACITY OF 1 BILLION POUNDS PER YEAR OF BUTADIENE, AN ALKYLATE (MIXTURE OF OCTANES) UNIT (REFERRED TO AS INALK UNIT) WITH A MAXIMUM CAPACITY OF 1 BILLION POUNDS PER YEAR OF ALKYLATE, AND ANCILLARY SUPPORT EQUIPMENT.

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	AL	Sipsey	> 250 km

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Nitrogen Oxides (NOx)	9.0700 (Tons/Year)
Volatile Organic Compounds (VOC)	10.3300 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: HIGH AND LOW PRESSURE FLARES

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: NATURAL GAS

Throughput: 1600.00 T/YR

Process Notes:
THE NOX EMISSIONS INCREASES FROM THE FLARES ARE DUE TO THE COMBUSTION OF NATURAL GAS USED AS SWEEP GAS IN THE FLARE HEADER SYSTEM. THE NATURAL GAS ALSO HELPS TO MAINTAIN THE MINIMUM HEATING VALUE NECESSARY TO ENSURE DESTRUCTION OF THE VOCS IN THE VENT STREAMS. THE NATURAL GAS FLOW WAS NOT COMPLETELY ACCOUNTED FOR IN THE ORIGINAL PERMIT REPRESENTATIONS AND IS BEING ADDED TO THE PERMIT AT THIS TIME. THERE IS NO APPLICABLE POST-COMBUSTION TECHNOLOGY TO REDUCE NOX EMISSIONS FROM FLARES. EMISSIONS ARE MINIMIZED BY PROPER OPERATION OF THE FLARES, INCLUDING COMPLIANCE WITH THE APPLICABLE PROVISIONS IN SECTION 60.18 OF SUBPART A OF THE FEDERAL NEW SOURCE PERFORMANCE STANDARDS (NSPS) IN 40 CFR PART 60 AND THE PROVISIONS OF SPECIAL CONDITION 13 OF PERMIT 41945. SPECIAL CONDITION 13 REQUIRES THE FLARES TO BE OPERATED WITH A FLAME PRESENT AT ALL TIMES, MONITORING TO ENSURE THE PRESENCE OF A CONSTANT PILOT FLAME, NO VISIBLE EMISSIONS, AND CONTINUOUS FLOW RATE AND BTU CONTENT MONITORING OF THE FLARED STREAMS. THESE OPERATING REQUIREMENTS WERE DETERMINED TO SATISFY LAER IN THE ORIGINAL PERMITTING OF THE FLARES, AND THERE HAVE BEEN NO CHANGES IN FLARE TECHNOLOGY

SINCE THAT TIME THAT WOULD FURTHER IMPROVE FLARE OPERATION. THE FLARES WILL CONTINUE TO OPERATE IN COMPLIANCE WITH THESE CONDITIONS; THEREFORE, THE LAER REQUIREMENT WILL BE MET.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 9.0700 T/YR ANNUAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements:
Control Method: (N)
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Yes
Pollutant/Compliance Notes:

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3200 T/YR ANNUAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: N
Case-by-Case Basis: LAER
Other Applicable Requirements:
Control Method: (A) FLARE
Est. % Efficiency: 98.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Yes

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: ALKFUG, BDEFUG, AND UTILFUG

Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))

Primary Fuel:

Throughput: 0

Process Notes: THE INCREASE IN VOC EMISSIONS FROM THE PROCESS FUGITIVE EPNS (ALKFUG, BDEFUG, AND UTILFUG) ARE THE RESULT OF A CORRECTION TO THE UNDERESTIMATED COMPONENT COUNTS. THE COMPONENTS ARE CURRENTLY INCLUDED IN SABINA'S LEAK DETECTION AND REPAIR (LDAR) DATABASE AND ARE MONITORED IN ACCORDANCE WITH THE SAME 28LAER LDAR PROGRAM REQUIRED FOR THE COMPONENTS THAT ARE CURRENTLY AUTHORIZED BY THE PERMIT. AS THE NAME IMPLIES, 28LAER WAS SPECIFICALLY DEVELOPED BY TCEQ TO SATISFY THE LAER REQUIREMENT FOR FUGITIVE EMISSIONS THAT ARE SUBJECT TO NNSR. SPECIAL CONDITION 9 OF THE DRAFT CONDITIONS FOR THIS PERMIT AMENDMENT CONTAINS TCEQ'S MOST CURRENT 28LAER LDAR LANGUAGE; THEREFORE, IT REPRESENTS CURRENT LAER REQUIREMENTS. IN ADDITION TO THE STANDARD 28LAER REQUIREMENT, SPECIAL CONDITION 10 OF THE PERMIT REQUIRES FLANGES AND CONNECTORS IN GAS/VAPOR AND LIGHT LIQUID SERVICE TO BE MONITORED QUARTERLY IN ACCORDANCE WITH THE SAME REQUIREMENTS SPECIFIED IN SPECIAL CONDITION 9 FOR VALVES. BECAUSE THE ADDITIONAL COMPONENTS ARE ALSO MONITORED IN ACCORDANCE WITH THESE SAME REQUIREMENTS AND WILL CONTINUE TO BE AS SPECIFIED IN THE PERMIT, THE LAER REQUIREMENT IS MET.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 9.0100 T/YR ANNUAL

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: LAER

Other Applicable Requirements:

Control Method: (P) THE FACILITY UTILIZES THE LOWEST ACHEIVABLE EMISSION RATE (LAER) LDAR (LEAK DETECTION AND REPAIR) PROGRAM.

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: STORMWATER TANK
Process Type: 64.006 (Wastewater Collection & Treatment)
Primary Fuel: N/A
Throughput: 15.00 MGAL/YR
Process Notes: THERE IS A SMALL INCREASE, 0.31 TPY, IN THE ALLOWABLE VOC EMISSIONS FROM THE STORMWATER TANK (TK-9804) DUE TO A CHANGE IN THE EMISSION CALCULATION METHOD THAT IS MORE APPLICABLE TO THE TANK AND ITS CONTENTS THAN THE CALCULATION ORIGINALLY USED FOR THE TANK. THE TANK IS EQUIPPED WITH AN EXTERNAL FLOATING ROOF WITH A MECHANICAL PRIMARY SEAL AND A RIM-MOUNTED SECONDARY SEAL TO CONTROL VOC EMISSIONS. THIS LEVEL OF EMISSIONS CONTROL IS THE MOST STRINGENT CONTROL KNOWN TO BE USED FOR STORAGE OF STORMWATER CONTAINING TRACE AMOUNTS OF VOC AND IS THEREFORE CONSIDERED TO BE LAER

POLLUTANT NAME: Volatile Organic Compounds (VOC)
CAS Number: VOC
Test Method: Unspecified
Pollutant Group(s): (Volatile Organic Compounds (VOC))
Emission Limit 1: 0.3100 T/YR ANNUAL
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: LAER
Other Applicable Requirements:
Control Method: (A) EXTERNAL FLOATING ROOF
Est. % Efficiency: 88.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: BOILER

Process Type: 13.310 (Natural Gas (includes propane and liquefied petroleum gas))

Primary Fuel: NATURAL GAS

Throughput: 228.00 SCF/H

Process Notes: THE BOILER, EPN BLR, HAS SCR WITH LOW NOX BURNERS, A NOX LONG-TERM EMISSION FACTOR OF 0.007 LB NOX /MMBTU AND A SHORT-TERM EMISSION FACTOR OF 0.020 LB NOX /MMBTU TO ACCOMMODATE FOR HOT STANDBY. BECAUSE OF THE LOW ANNUAL EMISSION FACTOR, THIS WAS ACCEPTED AS LAER.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.0200 LB/MMBTU HOURLY

Emission Limit 2: 0.0070 LB/MMBTU ANNUAL

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: LAER

Other Applicable Requirements:

Control Method: (A) LOW NOX BURNERS AND SCR

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: COOLING TOWER

Process Type: 50.007 (Petroleum Refining Equipment Leaks/Fugitive Emissions)

Primary Fuel: N/A

Throughput: 73000.00 GAL/MIN

Process Notes: THE COOLING TOWER, EPN CT, HAS A NON-CONTACT DESIGN, UTILIZES MONTHLY MONITORING OF VOC IN WATER PER APPENDIX P OR APPROVED EQUIVALENT AND IDENTIFIED LEAKS ARE REPAIRED AS SOON AS POSSIBLE, BUT BEFORE NEXT SCHEDULED SHUTDOWN.

POLLUTANT NAME: Volatile Organic Compounds (VOC)

CAS Number: VOC

Test Method: Unspecified

Pollutant Group(s): (Volatile Organic Compounds (VOC))

Emission Limit 1: 13.4300 T/YR ANNUAL

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) THE COOLING TOWER, EPN CT, HAS A NON-CONTACT DESIGN, UTILIZES MONTHLY MONITORING OF VOC IN WATER PER APPENDIX P OR APPROVED EQUIVALENT AND IDENTIFIED LEAKS ARE REPAIRED AS SOON AS POSSIBLE, BUT BEFORE NEXT SCHEDULED SHUTDOWN.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

Facility Information

RBLC ID: AL-0249 (final)

Date Determination Last Updated: 08/17/2010

Corporate/Company Name: EVONIK DEGUSSA CORPORATION

Facility Name: EVONIK DEGUSSA CORPORATION

Facility Contact: 2514434763 BILL.KLUTZ@EVONIK.COM

Facility Description: CHEMICAL MANUFACTURING FACILITY

Permit Type: A: New/Greenfield Facility

Permit Number: X001, X008, X043, X125

Permit Date: 01/07/2010 (actual)

FRS Number: 110017408296

SIC Code: 2869

NAICS Code: 11

Permit URL:

EPA Region: 4 **COUNTRY:** USA

Facility County: MOBILE

Facility State: AL

Facility ZIP Code:

Permit Issued By: ALABAMA DEPT OF ENVIRONMENTAL MGMT (Agency Name)
MR. DALE HURST(Agency Contact) (334) 271-7882 ADH@ADEM.STATE.AL.US

Permit Notes:

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Nitrogen Oxides (NOx)	463.1000 (Tons/Year)
Particulate Matter (PM)	21.9000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: METHIONINE PRODUCTION UNIT - THERMAL OXIDIZER

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel: NATURAL GAS

Throughput: 62.40 MMBTU/H

Process Notes: EXPANDING METHIONINE PRODUCTION

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1: 10.0000 % OPACITY

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.4900 LB/H
Emission Limit 2: 0.0260 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.4900 LB/H
Emission Limit 2: 0.0260 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 16.0700 LB/H
Emission Limit 2: 360.0000 PPM @ 3% O2
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) THERMAL OXIDIZER - SNCR
Est. % Efficiency: 64.800
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.4900 LB/H
Emission Limit 2: 0.0260 G/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: METHIONINE PRODUCTION UNIT - CEILCOTE SCRUBBER A
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3700 LB/H
Emission Limit 2: 0.0023 GR/DSCF

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) PACKED BED SCRUBBER

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3700 LB/H

Emission Limit 2: 0.0023 GR/DSCF

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) PACKED BED SCRUBBER

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3700 LB/H

Emission Limit 2: 0.0023 GR/DSCF

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) PACKED BED SCRUBBER

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: METHIONINE PRODUCTION UNIT - CEILCOTE SCRUBBER B

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1: 10.0000 % OPACITY

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) PACKED BED SCRUBBER

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3700 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3700 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3700 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: METHIONINE PRODUCTION UNIT - CEILCOTE SCRUBBER C
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5500 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5500 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5500 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: METHIONINE PRODUCTION UNIT - CEILCOTE SCRUBBER D
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel:
Throughput: 0

Process Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5500 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5500 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.5500 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: METHIONINE PRODUCTION UNIT - CEILCOTE SCRUBBER E

Process Type: 64.999 (Other SOCMI Processes)

Primary Fuel:

Throughput: 0

Process Notes:

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE

Test Method: Unspecified

Pollutant Group(s):

Emission Limit 1: 10.0000 % OPACITY

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) PACKED BED SCRUBBER

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3700 LB/H

Emission Limit 2: 0.0023 GR/DSCF

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3700 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3700 LB/H
Emission Limit 2: 0.0023 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) PACKED BED SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: EXISTING HCN PRODUCTION UNIT - WASTE HEAT BOILER
Process Type: 12.300 (Gaseous Fuel & Gaseous Fuel Mixtures (>100 million BTU/H & ¿250 million Btu/H))
Primary Fuel: NATURAL GAS
Throughput: 212.60 MMBTU/H
Process Notes: HCN PRODUCTION UNIT WASTE HEAT BOILER

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 59.1000 LB/H
Emission Limit 2: 243.0000 PPM @ 3% 02
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SNCR
Est. % Efficiency: 60.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.5800 LB/H
Emission Limit 2: 0.0050 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.5800 LB/H
Emission Limit 2: 0.0050 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 1.5800 LB/H
Emission Limit 2: 0.0050 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: HCN PRODUCTION UNIT - FLARE A1

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: HCN PRODUCTION UNIT EMERGENCY FLARE - A1

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0700 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0700 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 14.2900 LB/H ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0700 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 63.11(B) SEE NOTES
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: HCN PRODUCTION UNIT - FLARE A2
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel:
Throughput: 0
Process Notes: HCN PRODUCTION UNIT EMERGENCY FLARE A2

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 14.2900 LB/H ANNUAL AVERAGE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0700 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0700 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0700 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)

CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 63.11(B) SEE NOTES
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: HCN PRODUCTION UNIT - TANK FARM FLARE - A5
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel:
Throughput: 0
Process Notes: HCN PRODUCTION UNIT TANK FARM FLARE A5

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 1.7900 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0160 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0160 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0160 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 63.11(B) SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT

Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: AMSUL PRODUCTION UNIT - DUST SCRUBBER - A10
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel:
Throughput: 0
Process Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2400 LB/H
Emission Limit 2: 0.0145 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency: 85.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM

Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2400 LB/H
Emission Limit 2: 0.0145 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency: 85.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.2400 LB/H
Emission Limit 2: 0.0145 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency: 85.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE

Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: ACROLEIN PRODUCTION UNIT - THERMAL OXIDIZER
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel: NATURAL GAS
Throughput: 77.44 MMBTU/H
Process Notes: ACROLEIN PRODUCTION UNIT THERMAL OXIDIZER

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 15.4900 LB/H
Emission Limit 2: 61.0000 PPM @ 3% O2
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) LOW NOX BURNERS

Est. % Efficiency: 45.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.8330 LB/H
Emission Limit 2: 0.0030 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.8330 LB/H
Emission Limit 2: 0.0030 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 μ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.8330 LB/H
Emission Limit 2: 0.0030 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: ANDRUSSOW HCN PRODUCTION UNIT - THERMAL OXIDIZER / WASTE HEAT BOILER
Process Type: 12.300 (Gaseous Fuel & Gaseous Fuel Mixtures (>100 million BTU/H & ¿250 million Btu/H))
Primary Fuel: NATURAL GAS
Throughput: 48.30 MMBTU/H
Process Notes: ANDRUSSOW WASTE HEAT BOILER/ THERMAL OXIDIZER

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3600 LB/H
Emission Limit 2: 0.0544 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3600 LB/H
Emission Limit 2: 0.0544 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 18.3100 LB/H
Emission Limit 2: 150.0000 PPM @ 3% O2
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) SNCR
Est. % Efficiency: 60.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3600 LB/H
Emission Limit 2: 0.0544 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: ANDRUSSOW HCN PRODUCTION UNIT - FLARE HCNA - 2

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel:

Throughput: 0

Process Notes: ANDRUSSOW FLARE HCNA - 2

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 20.0100 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: U

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.1100 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1100 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.1100 LB/H
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 63.11(B) SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: U
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: MACT
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: ANDRUSSOW AMSUL PRODUCTION UNIT DUST SCRUBBER
Process Type: 64.999 (Other SOCMI Processes)
Primary Fuel:
Throughput: 0
Process Notes: ANDRUSSOW DUST SCRUBBER HCNA - 3

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3600 LB/H
Emission Limit 2: 0.0544 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency: 85.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.3600 LB/H
Emission Limit 2: 0.0544 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency: 85.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 2.5 µ (FPM2.5)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.3600 LB/H
Emission Limit 2: 0.0544 GR/DSCF
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency: 85.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Visible Emissions (VE)
CAS Number: VE
Test Method: Unspecified
Pollutant Group(s):
Emission Limit 1: 10.0000 % OPACITY
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Unknown
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (A) WET SCRUBBER
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Facility Information

RBLC ID:	ID-0017 (final)	**Date Determination Last Updated:**	02/05/2010
Corporate/Company Name:	SOUTHEAST IDAHO ENERGY, LLC	**Permit Number:**	P-2008.0066
Facility Name:	POWER COUNTY ADVANCED ENERGY CENTER	**Permit Date:**	02/10/2009 (actual)
Facility Contact:	TOM HORNYAK 3039534297 T.HORNYAK@REHINC.COM	**FRS Number:**	UNKNOWN
Facility Description:	COAL/PETCOKE GASIFICATION PLANT PRODUCING AMMONIA, UREA, UAN, AND ELEMENTAL SULFUR.	**SIC Code:**	2873
Permit Type:	A: New/Greenfield Facility	**NAICS Code:**	113210
Permit URL:			
EPA Region:	10	**COUNTRY:**	USA
Facility County:	POWER		
Facility State:	ID		
Facility ZIP Code:	83211		
Permit Issued By:	IDAHO DEPT OF ENVIRONMENTAL QUALITY (Agency Name) MR. BILL ROGERS(Agency Contact) (208)373-0437 WILLIAM.ROGERS@DEQ.IDAHO.GOV		
Permit Notes:	FACILITY LOCATION: LAMB WESTON ROAD, AMERICAN FALLS, IDAHO. DESIGNATED FACILITY (FUEL CONVERSION PLANT AND CHEMICAL PLANT). PSD THRESHOLD IS 100 T/YR. BACT REQ'D FOR PM, PM10, CO, AND NOX.		

Affected Boundaries:

Boundary Type:	Class 1 Area State:	Boundary:	Distance:
CLASS1	WY	Bridger	100km - 50km
CLASS1	ID	Craters of the Moon	< 100 km
CLASS1	WY	Fitzpatrick	100km - 50km
CLASS1	NV	Jarbridge	100km - 50km
CLASS1	MT	Red Rock Lakes	100km - 50km
CLASS1	ID	Sawtooth	100km - 50km
CLASS1	WY	Teton	100km - 50km
CLASS1	WY	Washakie	100km - 50km
CLASS1	WY	Yellowstone NP	100km - 50km

Facility-wide Emissions:

Pollutant Name:	Facility-wide Emissions Increase:
Carbon Monoxide	166.0000 (Tons/Year)
Nitrogen Oxides (NOx)	109.0000 (Tons/Year)
Particulate Matter (PM)	60.2000 (Tons/Year)
Sulfur Oxides (SOx)	23.4000 (Tons/Year)
Volatile Organic Compounds (VOC)	5.1000 (Tons/Year)

Process/Pollutant Information

PROCESS NAME: ZLDS COOLING TOWER, SRC30

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 985.00 GAL/MIN

Process Notes: ZERO LIQUID DISCHARGE SYSTEM - COOLING WATER FLOW RATE 985 GPM. TDS MAX 50,000 MG/L.

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0010 % OF TOTAL CIRC FLOW

Emission Limit 2: 0.3000 LB/H

Standard Emission: 20.0000 %

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) DRIFT/MIST ELIMINATORS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0010 % OF TOTAL CIRC FLOW

Emission Limit 2: 0.3000 LB/H

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) DRIFT/MIST ELIMINATORS

Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: COAL/PETCOKE RAILCAR UNLOADING & STORAGE, SRC01-SRC07

Process Type: 90.011 (Coal Handling/Processing/Preparation/Cleaning)

Primary Fuel:

Throughput: 5000.00 T/H

Process Notes: ENCLOSED RAILCAR UNLOADING AT NEGATIVE PRESSURE. COVERED CONVEYORS AND ENCLOSED TRANSFER POINTS. STORAGE IN EUROSILO OR EQUIVALENT. HIGH EFFICIENCY BAGHOUSES (RAILCAR UNLOADING, CONVEYORS, STORAGE SILO VENTS).

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0900 LB/H
Emission Limit 2: 0.0009 GR/DSCF
Standard Emission: 5.0000 %
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (B) ENCLOSED RAILCAR UNLOADING AT NEGATIVE PRESSURE. COVERED CONVEYORS AND ENCLOSED TRANSFER POINTS. STORAGE IN EUROSILO OR EQUIVALENT. HIGH EFFICIENCY BAGHOUSES (RAILCAR UNLOADING, CONVEYORS, STORAGE SILO VENTS).
Est. % Efficiency: 99.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: PMT LIMIT IS IN LB/H (APPROX. EQUIV TO GRAIN LOADING SHOWN AS EMISSION LIMIT 2). NSPS SUBPART Y: CURRENT OPACITY=20%, 2008 PROPOSED= 5%.

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0400 LB/H

Emission Limit 2: 0.0004 GR/DSCF

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) ENCLOSED RAILCAR UNLOADING AT NEGATIVE PRESSURE. COVERED CONVEYORS AND ENCLOSED TRANSFER POINTS. STORAGE IN EUROSILO OR EQUIVALENT. HIGH EFFICIENCY BAGHOUSES (RAILCAR UNLOADING, CONVEYORS, STORAGE SILO VENTS).

Est. % Efficiency: 99.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes: PMT LIMIT IS IN LB/H (APPROX. EQUIV TO GRAIN LOADING SHOWN AS EMISSION LIMIT 2).

Process/Pollutant Information

PROCESS NAME: COAL/PETCOKE RECLAIM TO ROD MILL, SRC08-SRC12

Process Type: 90.011 (Coal Handling/Processing/Preparation/Cleaning)

Primary Fuel:

Throughput: 105.00 T/H

Process Notes: COVERED CONVEYORS WITH ENCLOSED TRANSFER POINTS. CAPACITY IS 105 T/H FOR EACH CONVEYOR.

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0020 LB/H

Emission Limit 2: GR/DSCF SEE NOTE

Standard Emission: 5.0000 %

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (B) COVERED CONVEYORS WITH ENCLOSED TRANSFER POINTS. HIGH EFFICIENCY BAGHOUSES.

Est. % Efficiency: 99.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PMT LIMIT IS IN LB/H (APPROX EQUIV TO GRAIN LOADING SHOWN AS EMISSION LIMIT 2). NSPS SUBPART Y: CURRENT OPACITY=20%, 2008 PROPOSED= 5%.

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0010 LB/H

Emission Limit 2: GR/DSCF SEE NOTE

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (B) COVERED CONVEYORS WITH ENCLOSED TRANSFER POINTS. HIGH EFFICIENCY BAGHOUSES.

Est. % Efficiency: 99.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: PMT LIMIT IS IN LB/H (APPROX EQUIV TO GRAIN LOADING SHOWN AS EMISSION LIMIT 2).

Process/Pollutant Information

PROCESS NAME: FLUXANT TRUCK LDOUT & CONVEYING, FUG

Process Type: 90.019 (Lime/Limestone Handling/Kilns/Storage/Manufacturing)

Primary Fuel:

Throughput: 250.00 T/H

Process Notes: GASIFIER FLUXANT VARIES, BUT MAY INCLUDE LIMESTONE, IRON ORE OR SAND.

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 20.0000 %

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) COVERED CONVEYORS AND ENCLOSED TRANSFER POINTS. FUGITIVE DUST BMPS.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) COVERED CONVEYORS AND ENCLOSED TRANSFER POINTS. FUGITIVE DUST BMPS.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: FLUXANT STORAGE, SRCXX
Process Type: 90.019 (Lime/Limestone Handling/Kilns/Storage/Manufacturing)
Primary Fuel:
Throughput: 250.00 T/H
Process Notes: GASIFIER FLUXANT VARIES, BUT MAY INCLUDE LIMESTONE, IRON ORE, OR SAND. MAX FILL RATE PRESUMED TO BE 250 T/H. MAX USE RATE IN GASIFIER IS 250 T/D.

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0020 LB/H
Emission Limit 2: LB/T SEE NOTE
Standard Emission: 20.0000 %
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY BAGHOUSE(S) ON STORAGE SILO VENT(S)
Est. % Efficiency: 99.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: PMT LIMIT IS LB/H (EQUIVALENT LB/T LIMIT IS SHOWN AS EMISSION LIMIT 2), BASED ON 250 T/H FILL RATE.

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0020 LB/H
Emission Limit 2: LB/T SEE NOTE
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (A) HIGH EFFICIENCY BAGHOUSE(S) ON STORAGE SILO VENT(S)
Est. % Efficiency: 99.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: PMT LIMIT IS LB/H (EQUIVALENT LB/T LIMIT IS SHOWN AS EMISSION LIMIT 2), BASED ON 250 T/H FILL RATE.

Process/Pollutant Information

PROCESS NAME: SLAG HAND, FUG
Process Type: 99.190 (Other Fugitive Dust Sources)
Primary Fuel:
Throughput: 580.00 T/D
Process Notes: GASIFIER SLAG IS WET WHEN CONVEYED TO STORAGE.

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 20.0000 %
Emission Limit 2:
Standard Emission: %
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (N) STORAGE IN 3-SIDED BUNKER. FUGITIVE DUST BMPS.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) STORAGE IN 3-SIDED BUNKER. FUGITIVE DUST BMPS.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: LEAKS - SYNGAS PIPING OR VALVES, CO FUG
Process Type: 64.002 (Equipment Leaks (valves, compressors, pumps, etc.))
Primary Fuel:
Throughput:
Process Notes: HIGH CO CONCENTRATION IN SYNGAS FROM GASIFIER TO FINAL CO-SHIFT REACTOR.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) FUGITIVE CO BMPS.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: ASU REGEN HEATER, 0.1 MMBTU/H, SRC13
Process Type: 19.600 (Misc. Boilers, Furnaces, Heaters)
Primary Fuel: NAT GAS
Throughput: 0.10 MMBTU/H
Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 20.0000 %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: GASIFIER HEATERS (2), 25 MMBTU/H, SRC14 & SRC15
Process Type: 19.600 (Misc. Boilers, Furnaces, Heaters)
Primary Fuel: NAT GAS
Throughput: 25.00 MMBTU/H
Process Notes: BOTH HEATERS AT APPROX 25 MMBTU/H FOR STARTUP. NORMAL OPS ONE HEATER OFF, ONE ON STANDBY AT 9 MMBTU/H.

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 20.0000 %
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAIILABLE

Process/Pollutant Information

PROCESS NAME: GASIFIER FLARE, SRC16

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: SWEET SYNGAS

Throughput: 900000.00 LB/H

Process Notes: FLARING DURING STARUP AND UPSETS. SYNGAS CLEANUP PRIOR TO FLARING - GASIFIER QUENCH, SOUR WATER SCRUB, ACTIVATED CARBON BEDS (MIN 95% HG REMOVAL), AMINE SCRUB (MIN 95% S REMOVAL AS SO2). 1.5 MMBTU/HR NAT GAS PILOT.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) SMOKELESS FLARE. AIR OR STEAM-ASSIST ONLY IF UNASSISTED FLARE PRODUCES SMOKE. GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE. VE PER 40 CFR 60.18: NO VE AS DETERMINED BY METHOD 22, EXCEPT FOR TOTAL OF 5 MINS IN ANY 2-HR PERIOD. NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) SMOKELESS FLARE. AIR OR STEAM-ASSIST ONLY IF UNASSISTED FLARE PRODUCES SMOKE. GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) FLARE DESIGNED TO MINIMIZE CO EMISSIONS. GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: SELEXOL AGR CO2 VENT, SRC17

Process Type: 64.003 (Processes Vents (emissions from air oxidation, distillation, and other reaction vessels))

Primary Fuel:

Throughput:

Process Notes: CO2-RICH STREAM FROM ACID GAS REMOVAL (AGR) UNIT.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 8.7000 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) THERMAL OXIDIZER (CAT-OX)

Est. % Efficiency: 95.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Yes

Pollutant/Compliance Notes: TOTAL FLOW 299,585 LB/HR AT 28 F AND 44 PSIG. FLOW IS 98.89% CO2, 0.09% CO.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 0.9000 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) GOOD COMBUSTION PRACTICES FOR THERMAL OXIDIZER (CAT-OX) USED TO CONTROL CO EMISSIONS.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NOX EMISSIONS BASED ON 9 MMBTU/H NAT GAS BURNER ASSOCIATED WITH THE T.O/CAT-OX

Process/Pollutant Information

PROCESS NAME: UREA GRANULATION VENT, SRC19

Process Type: 61.012 (Fertilizer Production (except 61.009))

Primary Fuel:

Throughput: 1800.00 T/D

Process Notes:

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0110 LB/T

Emission Limit 2: 20.5000 LB/H

Standard Emission: 20.0000 %

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) WET SCRUBBER IS INTEGRAL PART OF GRANULATION PROCESS, IS PROCESS EQUIPMENT. DESIGNED FOR MIN 98% CAPTURE AND RECYCLING OF PM/PM10.

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0050 LB/T

Emission Limit 2: 9.0000 LB/H

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) WET SCRUBBER IS INTEGRAL PART OF GRANULATION PROCESS, IS PROCESS EQUIPMENT. DESIGNED FOR MIN 98% CAPTURE AND RECYCLING OF PM/PM10.

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: No

Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: NITRIC ACID PLANT TAILGAS, SRC20

Process Type: 62.014 (Nitric Acid Plants)

Primary Fuel:

Throughput: 575.00 T/D

Process Notes:

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))

Emission Limit 1: 50.0000 PPMV

Emission Limit 2: 1.1200 LB/T

Standard Emission: 10.0000 %

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (A) SCR, AMMONIA SLIP MAX 10 PPMV (DRY) CONVERTED TO 15% O2.

Est. % Efficiency: 98.000

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Yes

Pollutant/Compliance Notes: AT 575 T/D OF 57% ACID, PMT LIMIT IS 15.3 LB/H - (100% ACID/57% ACID) X 15.3 X 24 LB/DAY/ 575 TPD = 1.12 LB/TON OF 100% ACID.

Process/Pollutant Information

PROCESS NAME: PROCESS FLARE, SRC21

Process Type: 19.310 (Chemical Plant Flares)

Primary Fuel: PROCESS & PURGE GASES

Throughput:

Process Notes: PROCESS & PURGE GASES FROM 2000 T/D AMMONIA PLANT AND 2400 T/D UREA PLANT (LIQUID SOLUTION). 1.5 MMBTU/HR NAT GAS PILOT.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) SMOKELESS FLARE. AIR OR STEAM-ASSIST ONLY IF UNASSISTED FLARE PRODUCES SMOKE. GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE. VE PER 40 CFR 60.18: NO VE AS DETERMINED BY METHOD 22, EXCEPT FOR TOTAL OF 5 MINS IN ANY 2-HR PERIOD. NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) SMOKELESS FLARE. AIR OR STEAM-ASSIST ONLY IF UNASSISTED FLARE PRODUCES SMOKE. GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: COOLING TOWER, SRC22

Process Type: 99.009 (Industrial Process Cooling Towers)

Primary Fuel:

Throughput: 121000.00 GAL/MIN

Process Notes: COOLING WATER FLOW RATE 121,000 GPM. TDS MAX 5000 MG/L.

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0005 % OF TOTAL CIRC FLOW

Emission Limit 2: 1.5000 LB/H

Standard Emission: 20.0000 %

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (A) DRIFT/MIST ELIMINATORS

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0005 % OF TOTAL CIRC FLOW

Emission Limit 2: 1.5000 LB/H

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:
Control Method: (A) DRIFT/MIST ELIMINATORS
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: 250 MMBTU/H PACKAGE BOILER, SRC24
Process Type: 12.310 (Natural Gas (includes propane and liquefied petroleum gas))
Primary Fuel: NAT GAS
Throughput: 250.00 MMBTU/H
Process Notes: OPERATED ONLY DURING STARTUP AND SHUTDOWN, RAMPS DOWN/UP AS STEAM SUPERHEATER BOILER RAMPS UP/DOWN. COMBINED HEAT INPUT BALANCED

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0052 LB/MMBTU
Emission Limit 2: 1.3000 LB/H
Standard Emission: 20.0000 %
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: LB/MMBTU AND LB/H LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0052 LB/MMBTU
Emission Limit 2: 1.3000 LB/H
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: 0.0740 LB/MMBTU
Emission Limit 2: 18.5000 LB/H
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

POLLUTANT NAME: Nitrogen Oxides (NOx)

CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0200 LB/MMBTU
Emission Limit 2: 5.0000 LB/H
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (B) LOW-NOX BURNER AND FGR
Est. % Efficiency: 95.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

Process/Pollutant Information

PROCESS NAME: 250 MMBTU/H STEAM SUPERHEATER BOILER, SRC31
Process Type: 12.300 (Gaseous Fuel & Gaseous Fuel Mixtures (>100 million BTU/H & ¿250 million Btu/H))
Primary Fuel: NAT GAS & PSA TAILGAS
Throughput: 250.00 MMBTU/H
Process Notes: OPERATED DURING STEADY-STATE PRODUCTION ON NATURAL GAS AND (HYDROGEN-RICH) PRESSURE SWING ADSORBER (PSA) TAILGAS. BALANCED WITH PACKAGE BOILER AT STARTUP/SHUTDOWN SO COMBINED HEAT INPUT

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: 0.0052 LB/MMBTU
Emission Limit 2: 1.3000 LB/H

Standard Emission: 20.0000 %

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: LB/MMBTU AND LB/H LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 0.0052 LB/MMBTU

Emission Limit 2: 1.3000 LB/H

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS

Control Method: (N) GOOD COMBUSTION PRACTICES

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: LB/MMBTU AND LB/H LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

POLLUTANT NAME: Carbon Monoxide

CAS Number: 630-08-0

Test Method: Unspecified

Pollutant Group(s): (InOrganic Compounds)

Emission Limit 1: 0.0740 LB/MMBTU

Emission Limit 2: 18.5000 LB/H
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (N) GOOD COMBUSTION PRACTICES
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: 0.0200 LB/MMBTU
Emission Limit 2: 5.0000 LB/H
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) LOW-NOX BURNER & SCR, AMMONIA SLIP LIMITED TO 10 PPM (DRY) CORRECTED TO 15% O2.
Est. % Efficiency: 97.000
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: No
Pollutant/Compliance Notes: LIMITS APPLY TO PACKAGE BOILER AND STEAM SUPERHEATER COMBINED EMISSIONS.

Process/Pollutant Information

PROCESS NAME: 2 MW EMERGENCY GENERATOR, SRC25
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))

Primary Fuel: ASTM #1, 2, DIESEL

Throughput: 2000.00 KW

Process Notes: LIMITED TO 100 H/YR FOR ROUTINE TESTING AND MAINTENANCE

POLLUTANT NAME: Particulate Matter (PM)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: N

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements: NSPS , NSPS

Control Method: (P) ULSD FUEL, GOOD COMBUSTION PRACTICES, EPA CERTIFIED PER NSPS IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes: VE PER NSPS SUBPART IIII. NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: SEE NOTE

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (P) ULSD FUEL, GOOD COMBUSTION PRACTICES, EPA CERTIFIED PER NSPS IIII

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (N) GOOD COMBUSTION PRACTICES. EPA CERTIFIED PER NSPS IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1:
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (N) GOOD COMBUSTION PRACTICES. EPA CERTIFIED PER NSPS IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes:

Process/Pollutant Information

PROCESS NAME: 500 KW EMERGENCY GENERATOR, FIRE PUMP, SRC26
Process Type: 17.110 (Fuel Oil (ASTM # 1,2, includes kerosene, aviation, diesel fuel))
Primary Fuel: ASTM #1, 2, DIESEL
Throughput: 500.00 KW
Process Notes: LIMITED TO 100 H/YR FOR ROUTINE TESTING AND MAINTENANCE

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (P) ULSD FUEL, EPA CERTIFICATION PER NSPS IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: VE PER NSPS SUBPART IIII. NO EMISSION LIMITS AVAILABLE.

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (P) ULSD FUEL, EPA CERTIFICATION PER NSPS IIII
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITSAVAILABLE.

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (N) GOOD COMBUSTION PRACTICES. EPA CERTIFICATION PER NSPS IIII.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION KLIMITS AVAILABLE.

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: SEE NOTE

Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements: NSPS
Control Method: (N) GOOD COMBUSTION PRACTICES. EPA CERTIFICATION PER NSPS IIII.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: AMMONIA STORAGE FLARE, SRC27
Process Type: 19.310 (Chemical Plant Flares)
Primary Fuel: AMMONIA
Throughput:
Process Notes: 0.75 MMBTU/H NAT GAS PILOT.

POLLUTANT NAME: Particulate matter, filterable < 10 µ (FPM10)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) SMOKELESS FLARE. AIR OR STEAM-ASSIST ONLY IF UNASSISTED FLARE PRODUCES SMOKE. GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) SMOKELESS FLARE. AIR OR STEAM-ASSIST ONLY IF UNASSISTED FLARE PRODUCES SMOKE. GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: VE PER 40 CFR 60.18: NO VE AS DETERMINED BY METHOD 22, EXCEPT FOR TOTAL OF 5 MINS IN ANY 2-HR PERIOD. NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Carbon Monoxide
CAS Number: 630-08-0
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds)
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.
Est. % Efficiency:

Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

POLLUTANT NAME: Nitrogen Oxides (NOx)
CAS Number: 10102
Test Method: Unspecified
Pollutant Group(s): (InOrganic Compounds , Oxides of Nitrogen (NOx) , Particulate Matter (PM))
Emission Limit 1: SEE NOTE
Emission Limit 2:
Standard Emission:
Did factors, other then air pollution technology considerations influence the BACT decisions: Y
Case-by-Case Basis: BACT-PSD
Other Applicable Requirements:
Control Method: (N) GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.
Est. % Efficiency:
Cost Effectiveness: 0 $/ton
Incremental Cost Effectiveness: 0 $/ton
Compliance Verified: Unknown
Pollutant/Compliance Notes: NO EMISSION LIMITS AVAILABLE

Process/Pollutant Information

PROCESS NAME: AMMONIUM NITRATE NEUTRALIZER VENT, SRC29
Process Type: 61.012 (Fertilizer Production (except 61.009))
Primary Fuel:
Throughput: 715.00 T/D
Process Notes: AMMONIUM NITRATE/UAN PLANT PRODUCTION ~715 TPD AMMONIUM NITRATE AND ~1600 TPD UAN

POLLUTANT NAME: Particulate Matter (PM)
CAS Number: PM
Test Method: Unspecified
Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.5000 LB/H

Emission Limit 2: 20.0000 %

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) WET SCRUBBER IS INTEGRAL TO PROCESS. MUST BE DESIGNED TO CAPTURE AND RECYCLE 90% OF PM/PM10.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

POLLUTANT NAME: Particulate matter, filterable < 10 μ (FPM10)

CAS Number: PM

Test Method: Unspecified

Pollutant Group(s): (Particulate Matter (PM))

Emission Limit 1: 1.5000 LB/H

Emission Limit 2:

Standard Emission:

Did factors, other then air pollution technology considerations influence the BACT decisions: Y

Case-by-Case Basis: BACT-PSD

Other Applicable Requirements:

Control Method: (N) WET SCRUBBER IS INTEGRAL TO PROCESS. MUST BE DESIGNED TO CAPTURE AND RECYCLE 90% OF PM/PM10.

Est. % Efficiency:

Cost Effectiveness: 0 $/ton

Incremental Cost Effectiveness: 0 $/ton

Compliance Verified: Unknown

Pollutant/Compliance Notes:

Comments	RBLCID	FACILITY_NAME	CORPORATE_OR_COMPANY_NAME	FACILITY_COUNTY	FACILITY_STATE	PERMIT_NUM	SIC_CODE	PERMIT_ISSUANCE_DATE	DATE_DETERMINATION_LAST_UPDATED	FACILITY_DESCRIPTION	PROCESS_NAME	PROCCESS_TYPE	PRIMARY_FUEL	THROUGHPUT	THROUGHPUT_UNIT	PROCESS_NOTES	POLLUTANT	CAS_NUMBER	CONTROL_METHOD_DESCRIPTION	EMISSION_LIMIT_1	EMISSION_LIMIT_1_UNIT		EMISSION_LIMIT_1_AVG_TIME_CONDITION	CASE-BY-CASE_BASIS	COMPLIANCE_VERIFIED	EMISSION_LIMIT_2	EMISSION_LIMIT_2_UNIT	EMISSION_LIMIT_2_AVGERAGE_TIME_CONDITION	STANDARD_EMISSION_LIMIT	STANDARD_EMISSION_LIMIT_UNIT	STANDARD_LIMIT_AVERAGE_TIME_CONDITION	POLLUTANT_COMPLIANCE_NOTES
LAER 0.068 lb/MMBtu	AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	USA	AK	AQ1201CPT03	1382	42027	42419	OIL GAS EXPLORATION AND PRODUCTION FACILITY.	Drilling, HP, and LP Flares	19.31	Gas	50	MMscf/yr	50 MMscf/yr Drilling Flare, 35 MMscf/yr HP Flare-Pilot/Purge, 20 MMscf/yr LP Flare-Pilot/Purge	Nitrogen Oxides (NOx)	10102		0.068	LB/MMBTU			BACT-PSD	U	0						
LAER 0.068 lb/MMBtu	AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	USA	AK	AQ0083CPT06	2873	42010	42419	The Kenai Nitrogen Operations Facility is located at Mile 21 of the Kenai Spur Highway, near Kenai Alaska. It is classified as a nitrogenous fertilizer manufacturing facility under Standard Industrial Classification code 2873 and under North American Industrial Classification code 325311. The facility will produce ammonia and urea for bulk sale. There are two ammonia and two urea plants at Agrium's KNO facility. This permit authorizes the restart of one ammonia and one urea plant (plants 4 and 5). The ammonia plant converts natural gas with added steam and air to produce ammonia (NH3) and carbon dioxide (CO2). Feedstocks for the urea plant include CO2 and NH3. The utility plant generates the power and steam needed to operate the ammonia and urea plants. Final products are loaded at the Product Loading Wharf for shipment.	Three (3) Flares	19.31	Natural Gas	1.25	MMBTU/H	1.25 MMBtu/hr Ammonia Tank Flare, 0.4 MMBtu/hr Emergency Flare, and 1.25 MMBtu/hr Small Flare	Nitrogen Oxides (NOx)	10102	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	0.068	LB/MMBTU			BACT-PSD	U	0						
	AL-0249	EVONIK DEGUSSA CORPORATION	EVONIK DEGUSSA CORPORATION	MOBILE	AL	X001, X008, X043, X125	2869	40185	40407	CHEMICAL MANUFACTURING FACILITY	HCN PRODUCTION UNIT - FLARE A1	19.31		0		HCN PRODUCTION UNIT EMERGENCY FLARE - A1	Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES	14.29	LB/H		ANNUAL AVERAGE	BACT-PSD	U	0				0			
	AL-0249	EVONIK DEGUSSA CORPORATION	EVONIK DEGUSSA CORPORATION	MOBILE	AL	X001, X008, X043, X125	2869	40185	40407	CHEMICAL MANUFACTURING FACILITY	HCN PRODUCTION UNIT - FLARE A2	19.31		0		HCN PRODUCTION UNIT EMERGENCY FLARE A2	Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES	14.29	LB/H		ANNUAL AVERAGE	BACT-PSD		0				0			
	AL-0249	EVONIK DEGUSSA CORPORATION	EVONIK DEGUSSA CORPORATION	MOBILE	AL	X001, X008, X043, X125	2869	40185	40407	CHEMICAL MANUFACTURING FACILITY	HCN PRODUCTION UNIT - TANK FARM FLARE - A5	19.31		0		HCN PRODUCTION UNIT TANK FARM FLARE A5	Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES	1.79	LB/H			BACT-PSD		0				0			
	AL-0249	EVONIK DEGUSSA CORPORATION	EVONIK DEGUSSA CORPORATION	MOBILE	AL	X001, X008, X043, X125	2869	40185	40407	CHEMICAL MANUFACTURING FACILITY	ANDRUSSOW HCN PRODUCTION UNIT - FLARE HCNA - 2	19.31		0		ANDRUSSOW FLARE HCNA - 2	Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES	20.01	LB/H			BACT-PSD	U	0				0			
	AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	UNION	AR	0573-AOP-R16	2873	41596	42538	CHEMICAL MANUFACTURING, INCLUDING NITRIC ACID PRODUCTION, SUFLURIC ACID PRODUCTION, AMMONIA PRODUCTION, AND AMMONIA NITRATE PRODUCTION	AMMONIA PLANT AMMONIA VENT FLARE	19.31	NATURAL GAS	0.26	MMBTU/H		Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICE	792.03	LB/H	3046.269	ROLLING 3 HOUR AVERAGE	BACT-PSD	N	6.9	T/YR	ROLLING 12 MONTH AVERAGE	0.098	LB/MMBTU	ROLLING 3 HOUR AVERAGE	
see Nox standard reported for flare 0.098 lb/MMBtu	AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	UNION	AR	0573-AOP-R16	2873	41596	42538	CHEMICAL MANUFACTURING, INCLUDING NITRIC ACID PRODUCTION, SUFLURIC ACID PRODUCTION, AMMONIA PRODUCTION, AND AMMONIA NITRATE PRODUCTION	AMMONIA PLANT AMMONIA VENT FLARE	19.31	NATURAL GAS	0.26	MMBTU/H		Nitrous Oxide (N2O)	10024-97-2	GOOD COMBUSTION PRACTICE	0.0002	LB/MMBTU		ROLLING 3 HOUR AVERAGE	BACT-PSD	N	0				0			
	AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	UNION	AR	0573-AOP-R16	2873	41596	42538	CHEMICAL MANUFACTURING, INCLUDING NITRIC ACID PRODUCTION, SUFLURIC ACID PRODUCTION, AMMONIA PRODUCTION, AND AMMONIA NITRATE PRODUCTION	AMMONIA PLANT PROCESS SSM FLARE	19.31	NATURAL GAS	0.05	MMBTU/H		Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICE	0.093	LB/H	1.86	ROLLING 3 HOUR AVERAGE	BACT-PSD	N	0.41	T/YR	ROLLING 12 MONTH AVERAGE	0.098	LB/MMBTU	ROLLING 3 HOUR AVERAGE	
see Nox standard reported for flare 0.098 lb/MMBtu	AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	UNION	AR	0573-AOP-R16	2873	41596	42538	CHEMICAL MANUFACTURING, INCLUDING NITRIC ACID PRODUCTION, SUFLURIC ACID PRODUCTION, AMMONIA PRODUCTION, AND AMMONIA NITRATE PRODUCTION	AMMONIA PLANT PROCESS SSM FLARE	19.31	NATURAL GAS	0.05	MMBTU/H		Nitrous Oxide (N2O)	10024-97-2	GOOD COMBUSTION PRACTICE	0.0002	LB/MMBTU		ROLLING 3 HOUR AVERAGE	BACT-PSD	N	0				0			
see Nox standard reported for flare 0.098 lb/MMBtu	AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	UNION	AR	0573-AOP-R16	2873	41596	42538	CHEMICAL MANUFACTURING, INCLUDING NITRIC ACID PRODUCTION, SUFLURIC ACID PRODUCTION, AMMONIA PRODUCTION, AND AMMONIA NITRATE PRODUCTION	AMMONIA STORAGE FLARE	19.31	NATURAL GAS	0.05	MMBTU/H		Nitrogen Oxides (NOx)	10102	GOOD AND EFFICIENT OPERATING PRACTICES	10.02	LB/H	200.4	ROLLING 3 HOUR AVERAGE	BACT-PSD	N	43.88	T/YR	ROLLING 12 MONTH AVERAGE	0.098	LB/MMBTU	ROLLING 3 HOUR AVERAGE	
see Nox standard reported for flare 0.098 lb/MMBtu	AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	UNION	AR	0573-AOP-R16	2873	41596	42538	CHEMICAL MANUFACTURING, INCLUDING NITRIC ACID PRODUCTION, SUFLURIC ACID PRODUCTION, AMMONIA PRODUCTION, AND AMMONIA NITRATE PRODUCTION	AMMONIA STORAGE FLARE	19.31	NATURAL GAS	0.05	MMBTU/H		Nitrous Oxide (N2O)	10024-97-2	GOOD AND EFFICIENT OPERATING PRACTICES	0.0002	LB/MMBTU		ROLLING 3 HOUR AVERAGE	BACT-PSD	N	0				0			
	IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	LEE	IA	12-219	2873	41208	41499	NITROGENEOUS FERTILIZER MANUFACTURING	Ammonia Flare	19.31	natural gas	0.4	MMBTU/H	There are four (4) natural gas pilots	Nitrous Oxide (N2O)	10024-97-2	work practice/good combustion practices	0				BACT-PSD	U	0				0			There is no numeric emission limit in the permit.
	IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	LEE	IA	12-219	2873	41208	41499	NITROGENEOUS FERTILIZER MANUFACTURING	Ammonia Flare	19.31	natural gas	0.4	MMBTU/H	There are four (4) natural gas pilots	Nitrogen Oxides (NOx)	10102	work practice/good combustion practices	0				BACT-PSD	U	0				0			There is no numeric emission limit in the permit.
	ID-0017	POWER COUNTY ADVANCED ENERGY CENTER	SOUTHEAST IDAHO ENERGY, LLC	POWER	ID	P-2008.006 6	2873	39854	40214	COAL/PETCOKE GASIFICATION PLANT PRODUCING AMMONIA, UREA, UAN, AND ELEMENTAL SULFUR.	GASIFIER FLARE, SRC16	19.31	SWEET SYNGAS	900000	LB/H	FLARING DURING STARUP AND UPSETS. SYNGAS CLEANUP PRIOR TO FLARING - GASIFIER QUENCH, SOUR WATER SCRUB, ACTIVATED CARBON BEDS (MIN 95% HG REMOVAL), AMINE SCRUB (MIN 95% S REMOVAL AS SO2). 1.5 MMBTU/HR NAT GAS PILOT.	Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.	0			SEE NOTE	BACT-PSD	U	0				0			NO EMISSION LIMITS AVAILABLE
	ID-0017	POWER COUNTY ADVANCED ENERGY CENTER	SOUTHEAST IDAHO ENERGY, LLC	POWER	ID	P-2008.006 6	2873	39854	40214	COAL/PETCOKE GASIFICATION PLANT PRODUCING AMMONIA, UREA, UAN, AND ELEMENTAL SULFUR.	PROCESS FLARE, SRC21	19.31	PROCESS & PURGE GASES			PROCESS & PURGE GASES FROM 2000 T/D AMMONIA PLANT AND 2400 T/D UREA PLANT (LIQUID SOLUTION). 1.5 MMBTU/HR NAT GAS PILOT.	Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.	0			SEE NOTE	BACT-PSD	U	0				0			NO EMISSION LIMITS AVAILABLE
	ID-0017	POWER COUNTY ADVANCED ENERGY CENTER	SOUTHEAST IDAHO ENERGY, LLC	POWER	ID	P-2008.006 6	2873	39854	40214	COAL/PETCOKE GASIFICATION PLANT PRODUCING AMMONIA, UREA, UAN, AND ELEMENTAL SULFUR.	AMMONIA STORAGE FLARE, SRC27	19.31	AMMONIA			0.75 MMBTU/H NAT GAS PILOT.	Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES. MEET 40 CFR 60.18.	0			SEE NOTE	BACT-PSD	U	0				0			NO EMISSION LIMITS AVAILABLE
LAER 0.068 lb/MMBtu	IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	POSEY	IN	129-33576-00059	2873	41794	42494	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	FRONT END FLARE	19.31	NATURAL GAS	4	MMBTU/H	SSM VENTING IS LIMITED TO 336 HOURS PER YEAR. HEAT INPUT OF 4 MMBTU/HR IS FOR PILOT ONLY.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		595.49	LB/H, SSM VENTING	3-HR AVERAGE	0			
LAER 0.068 lb/MMBtu	IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	POSEY	IN	129-33576-00059	2873	41794	42494	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	BACK END FLARE	19.31	NATURAL GAS	4	MMBTU/H	SSM VENTING SHALL NOT EXCEEDD 336 HOURS PER YEAR. HEAT INPUT IS PILOT ONLY.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		624.94	LB/H, SSM VENTING	3-HR AVERAGE	0			

Comments	RBLCID	FACILITY_NAME	CORPORATE_OR_COMPANY_NAME	FACILITY_COUNTY	FACILITY_STATE	PERMIT_NUM	SIC_CODE	PERMIT_ISSUANCE_DATE	DATE_DETERMINATION_LAST_UPDATED	FACILITY_DESCRIPTION	PROCESS_NAME	PROCCESS_TYPE	PRIMARY_FUEL	THROUGHPUT	THROUGHPUT_UNIT	PROCESS_NOTES	POLLUTANT	CAS_NUMBER	CONTROL_METHOD_DESCRIPTION	EMISSION_LIMIT_1	EMISSION_LIMIT_1_UNIT		EMISSION_LIMIT_1_AVG_TIME_CONDITION	CASE-BY-CASE_BASIS	COMPLIANCE_VERIFIED	EMISSION_LIMIT_2	EMISSION_LIMIT_2_UNIT	EMISSION_LIMIT_2_AVGERAGE_TIME_CONDITION	STANDARD_EMISSION_LIMIT	STANDARD_EMISSION_LIMIT_UNIT	STANDARD_LIMIT_AVERAGE_TIME_CONDITION	POLLUTANT_COMPLIANCE_NOTES
LAER 0.068 lb/MMBtu	IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	POSEY	IN	129-33576-00059	2873	41794	42494	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	AMMONIA STORAGE FLARE	19.31	NATURAL GAS	1.5	MMBTU/H	HEAT INPUT IS FOR PILOT ONLY. SSM EMISSIONS HAVE SEPARATE LIMITS. SSM VENTING LIMITED 168 HOURS.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		125	LB/H, SSM VENTING	3-HR AVERAGE	0			
LAER 0.068 lb/MMBtu	IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	SPENCER	IN	147-32322-00062	2873	41542	42494	NITROGENOUS FERTILIZER PRODUCTION PLANT	FRONT END PROCESS FLARE	19.31	NATURAL GAS PILOT	0.25	MMBTU/H	HEAT INPUT IS FOR NATURAL GAS PILOT ONLY. SSM EMISSIONS ARE CONTROLLED BY THE FLARE AND ARE LIMITED TO 336 HOURS OF VENTING PER YEAR.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		595.47	LB/H, SSM VENTING	3-HR AVERAGE	0			SSM VENTING HOURS LIMITED TO 336 PER YEAR.
LAER 0.068 lb/MMBtu	IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	SPENCER	IN	147-32322-00062	2873	41542	42494	NITROGENOUS FERTILIZER PRODUCTION PLANT	BACK END AMMONIA FLARE	19.31	NATURAL GAS	0.25	MMBTU/H	HEAT INPUT IS FOR PILOT ONLY. SSM EMISSIONS ARE CONTROLLED BY THE FLARE AND ARE LIMITED TO 336 HR/YR.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		624.94	LB/H, SSM EVENTS	3-HR AVERAGE	0			SSM EVENTS LIMITED TO 336 HRS PER YEAR
LAER 0.068 lb/MMBtu	IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	SPENCER	IN	147-32322-00062	2873	41542	42494	NITROGENOUS FERTILIZER PRODUCTION PLANT	AMMONIA STORAGE FLARE	19.31	NATURAL GAS	0.13	MMBTU/H	HEAT INPUT IS FOR PILOT ONLY. SSM EVENTS HAVE SEPARATE LIMITS. SSM VENTING IS LIMITED TO 168 HOURS PER YEAR.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		125	LB/H, SSM VENTING	3-HR AVERAGE	0			SSM VENTING IS LIMITED TO 168 HR PER YEAR.
LAER 0.068 lb/MMBtu	IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	SPENCER	IN	147-32322-00062	2873	41542	42494	NITROGENOUS FERTILIZER PRODUCTION PLANT	UAN PLANT VENT FLARE	19.31		0.19	MMBTU/H	HEAT INPUT IS FOR NATUAL GAS PILOT. SSM EMISSIONS HAVE SEPARATE LIMITS. SSM VENTING LIMITED TO 336 HOURS PER YEAR.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		332.08	LB/H, SSM VENTING	3-HR AVERAGE	0			SSM VENTING LIMITED TO 336 HR PER YEAR.
LAER 0.068 lb/MMBtu	IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	POSEY	IN	129-33576-00059	2873	41794	42495	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	FRONT END FLARE	19.31	NATURAL GAS	4	MMBTU/H	SSM VENTING IS LIMITED TO 336 HOURS PER YEAR. HEAT INPUT OF 4 MMBTU/HR IS FOR PILOT ONLY.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		595.49	LB/H, SSM VENTING	3-HR AVERAGE	0			
LAER 0.068 lb/MMBtu	IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	POSEY	IN	129-33576-00059	2873	41794	42495	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	BACK END FLARE	19.31	NATURAL GAS	4	MMBTU/H	SSM VENTING SHALL NOT EXCEEDD 336 HOURS PER YEAR. HEAT INPUT IS PILOT ONLY.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		624.94	LB/H, SSM VENTING	3-HR AVERAGE	0			
LAER 0.068 lb/MMBtu	IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	POSEY	IN	129-33576-00059	2873	41794	42495	A STATIONARY NITROGEN FERTILIZER MANUFACTURING FACILITY	AMMONIA STORAGE FLARE	19.31	NATURAL GAS	1.5	MMBTU/H	HEAT INPUT IS FOR PILOT ONLY. SSM EMISSIONS HAVE SEPARATE LIMITS. SSM VENTING LIMITED 168 HOURS.	Nitrogen Oxides (NOx)	10102	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068	LB/MMBTU		3-HR AVERAGE	BACT-PSD		125	LB/H, SSM VENTING	3-HR AVERAGE	0			
	LA-0244	LAKE CHARLES CHEMICAL COMPLEX LAB UNIT	SASOL NORTH AMERICA, INC.	CALCASIEU	LA	PSD-LA-291(M3)	2869	40511	40730	Chemical Production Unit for Linear Alkyl Benzene (LAB)production.	EQT0026 - LAB Unit Flare LF-1	19.31	Natural Gas	0			Nitrogen Oxides (NOx)	10102	Steam Assisted	10.23	LB/H		HOURLY MAXIMUM	BACT-PSD	U	0			0			BACT was determined in 1983
	LA-0264	NORCO HYDROGEN PLANT	AIR PRODUCTS AND CHEMICALS, INC.	ST. CHARLES	LA	PSD-LA-750(M1)	2813	41156	41523	A new hydrogen plant (SMR) which was previously propoposed by Valero (LA-0245)	Flare (EQT0003)	19.31	natural gas	0.31	MMBTU/H		Nitrogen Oxides (NOx)	10102	Proper Equipment designs and good combustion practices	0.03	LB/H	0.096774	HOURLY MAXIMUM	BACT-PSD	U	0.09	T/YR	ANNUAL MAXIMUM	0			
application on LADQ has emissions during SU of 30.99 lb/hr max, 25.83 lb/hr avg, 4.34 tpy with 14.94 MMBtu/hr 2.07lb/MMBtu and 0.02 lb/hr max, 0.25 MMBtu/hr 0.08 lb/MMBtu	LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	JEFFERSON	LA	PSD-LA-768	2873	41360	42494	2780 TON PER DAY AMMONIA PRODUCTION FACILITY	AMMONIA STORAGE FLARE (2202-B)	19.31		15.19		NATURAL GAS (PILOT): 0.25 MM BTU/HR VENT GAS: 14.94 MM BTU/HR	Nitrogen Oxides (NOx)	10102	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.04	LB/H	0.002633	HOURLY MAXIMUM	BACT-PSD	U	0.13	T/YR	ANNUAL MAXIMUM	0			STARTUP NOX LIMITS ATTRIBUTED TO THIS FLARE (2202-B SU, EQT 0014): 30.99 LB/HR & 9.75 TPY.
LAEQ application 0.15 lb/hr max, 1.829 MMBtu/hr 0.082lb/MMBtu	LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	JEFFERSON	LA	PSD-LA-768	2873	41360	42494	2780 TON PER DAY AMMONIA PRODUCTION FACILITY	FRONT END PROCESS FLARE (2203-B)	19.31		8982.843		NATURAL GAS (PILOT): 1.829 MM BTU/HR VENT GAS: 6782.433 MM BTU/HR	Nitrogen Oxides (NOx)	10102	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.15	LB/H	1.67E-05	HOURLY MAXIMUM	BACT-PSD	U	0.54	T/YR	ANNUAL MAXIMUM	0			Mass limits in PSD permit exclude emissions associated with startup.
LAEQ application 0.15 lb/hr max, 1.829 MMBtu/hr 0.082lb/MMBtu	LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	JEFFERSON	LA	PSD-LA-768	2873	41360	42494	2780 TON PER DAY AMMONIA PRODUCTION FACILITY	BACK END PROCESS FLARE (2204-B)	19.31		8982.843		NATURAL GAS (PILOT): 1.829 MM BTU/HR VENT GAS: 8981.014 MM BTU/HR	Nitrogen Oxides (NOx)	10102	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.15	LB/H	1.67E-05	HOURLY MAXIMUM	BACT-PSD	U	0.54	T/YR	ANNUAL MAXIMUM	0			Mass limits in PSD permit exclude emissions associated with startup.
	LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	JEFFERSON	LA	PSD-LA-768	2873	41360	42494	2780 TON PER DAY AMMONIA PRODUCTION FACILITY	RAIL LOADING FLARE (2205-B)	19.31		0.25		0.25 MM BTU/HR	Nitrogen Oxides (NOx)	10102	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.03	LB/H	0.12	HOURLY MAXIMUM	BACT-PSD	U	0.08	T/YR	ANNUAL MAXIMUM	0			
	LA-0275	LINEAR ALKYL BENZENE (LAB) UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-291(M4)	2865	42489	42853	LAB production unit, PSD-LA-291(M2) issued October 18, 1998 - PSD-LA-291(M3) issued November 29, 2010. Permit PSD-LA-291(M4) for emission limits revision, No BACT change.	LF-1 - LAB Unit Flare	19.31	Natural Gas	0			Nitrogen Oxides (NOx)	10102	Steam assisted	10.15	LBS/HR		HOURLY MAXIMUM	BACT-PSD	U	0			0			

Comments	RBLCID	FACILITY_NAME	CORPORATE_OR_COMPANY_NAME	FACILITY_COUNTY	FACILITY_STATE	PERMIT_NUM	SIC_CODE	PERMIT_ISSUANCE_DATE	DATE_DETERMINATION_LAST_UPDATED	FACILITY_DESCRIPTION	PROCESS_NAME	PROCCESS_TYPE	PRIMARY_FUEL	THROUGHPUT	THROUGHPUT_UNIT	PROCESS_NOTES	POLLUTANT	CAS_NUMBER	CONTROL_METHOD_DESCRIPTION	EMISSION_LIMIT_1	EMISSION_LIMIT_1_UNIT		EMISSION_LIMIT_1_AVG_TIME_CONDITION	CASE-BY-CASE_BASIS	COMPLIANCE_VERIFIED	EMISSION_LIMIT_2	EMISSION_LIMIT_2_UNIT	EMISSION_LIMIT_2_AVGERAGE_TIME_CONDITION	STANDARD_EMISSION_LIMIT	STANDARD_EMISSION_LIMIT_UNIT	STANDARD_LIMIT_AVERAGE_TIME_CONDITION	POLLUTANT_COMPLIANCE_NOTES
N/A Ground flare	LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-778	2869	41782	42632		Multi-Point Ground Flares (EQT 836 & 837)	19.31		0			Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.	1072.86	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	44.86	TPY	ANNUAL MAXIMUM	0			
	LA-0295	WESTLAKE FACILITY	EQUISTAR CHEMICALS, LP	CALCASIEU	LA	PSD-LA-806	2821	42563	42632	Polypropylene manufacturing facility	Cogeneration Plant Flare (449, EQT 326)	19.31		0		Flare is subject to 40 CFR 60.18 and Subpart DDD.	Nitrogen Oxides (NOx)	10102		12.6	LB/H		HOURLY MAXIMUM	BACT-PSD	U	0			0			Annual NOx emissions from the Cogeneration Plant Flare (449, EQT 326); the M-Line Production Area Flare (22, EQT 19); and the Plant 5 Flare (21, EQT 138) (not addressed in the PSD permit) are limited to 36.65 TPY (GRP 12).
	LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-779	2821	41782	42853	The Low Density Polyethylene (LDPE) Unit will produce LDPE by the high pressure polymerization of ethylene.	LLPDE/LDPE Multi-Point Ground Flare (EQT 640)	19.31		0		The flare controls the following process vents: Purgas C-1 (LDPE-C-1, EQT 0641) Compressor Area C-2 (LDPE-C-2, EQT 0642) Comonomer Degassing Column C-3 (LDPE-C-3, EQT 0643) Isopentane Degassing Column C-4 (LDPE-C-4, EQT 0644) Purification Bed Regeneration C-7 (LDPE-C-7, EQT 0645) Analyzer Vents C-8 (LDPE-C-8, EQT 0646) Vent Recovery Accumulator C-9 (LDPE-C-9, EQT 0647)	Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.	174.09	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	39.25	TPY	ANNUAL MAXIMUM	0			BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.
	LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-779	2869	41782	42853		ETO/Guerbet Elevated Flare (EQT 1079)	19.31		0			Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP	8.51	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	3.26	TPY	ANNUAL MAXIMUM	0			The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.
	LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-779	2869	41782	42853		Elevated Flare (EQT 981)	19.31		0			Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	12383.13	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	22.62	TPY	ANNUAL MAXIMUM	0			BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Comments	RBLCID	FACILITY_NAME	CORPORATE_OR_COMPANY_NAME	FACILITY_COUNTY	FACILITY_STATE	PERMIT_NUM	SIC_CODE	PERMIT_ISSUANCE_DATE	DATE_DETERMINATION_LAST_UPDATED	FACILITY_DESCRIPTION	PROCESS_NAME	PROCCESS_TYPE	PRIMARY_FUEL	THROUGHPUT	THROUGHPUT_UNIT	PROCESS_NOTES	POLLUTANT	CAS_NUMBER	CONTROL_METHOD_DESCRIPTION	EMISSION_LIMIT_1	EMISSION_LIMIT_1_UNIT		EMISSION_LIMIT_1_AVG_TIME_CONDITION	CASE-BY-CASE_BASIS	COMPLIANCE_VERIFIED	EMISSION_LIMIT_2	EMISSION_LIMIT_2_UNIT	EMISSION_LIMIT_2_AVGERAGE_TIME_CONDITION	STANDARD_EMISSION_LIMIT	STANDARD_EMISSION_LIMIT_UNIT	STANDARD_LIMIT_AVERAGE_TIME_CONDITION	POLLUTANT_COMPLIANCE_NOTES
N/A Ground flare	LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-779	2869	41782	42853		Ground Flare (EQT 982)	19.31		0			Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	8565.31	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	80.84	TPY	ANNUAL MAXIMUM	0			BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
	LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-779	2869	41782	42853		Elevated Flare and Ground Flare (EQTs 1012 & 1013)	19.31				Normal operating rate = 79,370 lb/hr	Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	2.43	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	1.06	TPY*	ANNUAL MAXIMUM	0			Pound per hour NOx limitations are per flare. *Annual NOx emissions from both flares are limited to the TPY value reported.
	LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-779	2869	41782	42853		Elevated Flare (EQT 133)	19.31				Normal operating rate = 860.33 MM lb/yr	Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	55.32	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	41.42	TPY	ANNUAL MAXIMUM	0			BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
N/A Ground flare	LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	CALCASIEU	LA	PSD-LA-779	2869	41782	42853		Emission Combustion Unit #3 Ground Flare (EQT 500)	19.31				Normal operating rate = 860.33 MM lb/yr	Nitrogen Oxides (NOx)	10102	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	49.68	LB/HR		HOURLY MAXIMUM	BACT-PSD	U	10.78	TPY	ANNUAL MAXIMUM	0			BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
	LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	CALCASIEU PARISH	LA	PSD-LA-803(M1)	2869	42551	42853	Proposed facility to produce methanol, H2, H2SO4, CO2, Argon and electricity from Pet Coke	Flares	19.31	Fuel Gas	1008	MM BTU/hr		Nitrogen Oxides (NOx)	10102		0				BACT-PSD	U	0			0			
LAER 0.068 lb/MMBtu	LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	CALCASIEU	LA	PSD-LA-813	2869	42585	42853	modify and restart-up a mothballed facility to produce 1,009 million lbs/yr of ethylene	Flare No. 1 - 008	19.31	natural gas	85097	MM BTU/yr		Nitrogen Oxides (NOx)	10102	complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices)	0.068	LB/MM BTU			BACT-PSD	U	0			0			
LAER 0.068 lb/MMBtu	LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	CALCASIEU	LA	PSD-LA-813	2869	42585	42853	modify and restart-up a mothballed facility to produce 1,009 million lbs/yr of ethylene	Pyrolysis Gasoline Tank Flare - 009	19.31	natural gas	0.66	mm btu/hr		Nitrogen Oxides (NOx)	10102	complying with 40 CFR 60.18 and 63.11; good combustion practices (including establishment of flare minimization practices)	0.068	LB/MM BTU			BACT-PSD	U	0			0			
LAER 0.068 lb/MMBtu	LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	CALCASIEU	LA	PSD-LA-813	2869	42585	42853	modify and restart-up a mothballed facility to produce 1,009 million lbs/yr of ethylene	vessel evacuation flare - 018	19.31	natural gas	3.04	mm btu/hr		Nitrogen Oxides (NOx)	10102	good combustion practices (including establishment of flare minimization practices)	0.068	LB/MM BTU		THREE ONE-HOUR TEST AVERAGE	BACT-PSD	U	0			0			

Comments	RBLCID	FACILITY_NAME	CORPORATE_OR_COMPANY_NAME	FACILITY_COUNTY	FACILITY_STATE	PERMIT_NUM	SIC_CODE	PERMIT_ISSUANCE_DATE	DATE_DETERMINATION_LAST_UPDATED	FACILITY_DESCRIPTION	PROCESS_NAME	PROCCESS_TYPE	PRIMARY_FUEL	THROUGHPUT	THROUGHPUT_UNIT	PROCESS_NOTES	POLLUTANT	CAS_NUMBER	CONTROL_METHOD_DESCRIPTION	EMISSION_LIMIT_1	EMISSION_LIMIT_1_UNIT		EMISSION_LIMIT_1_AVG_TIME_CONDITION	CASE-BY-CASE_BASIS	COMPLIANCE_VERIFIED	EMISSION_LIMIT_2	EMISSION_LIMIT_2_UNIT	EMISSION_LIMIT_2_AVGERAGE_TIME_CONDITION	STANDARD_EMISSION_LIMIT	STANDARD_EMISSION_LIMIT_UNIT	STANDARD_LIMIT_AVERAGE_TIME_CONDITION	POLLUTANT_COMPLIANCE_NOTES
	LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	ASCENSION	LA	PSD-LA-761(M4)	2869	42726	42853	methanol plant (Unit I and Unit II) to produce 6000 metric tons of methanol by steam reforming natural gas	flares (I-X-703, II-X-703)	19.31	natural gas	3723	mm btu/hr		Nitrogen Oxides (NOx)	10102	complying with 40 CFR 63.11	0				BACT-PSD	U	0			0			BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)
	LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	ST. CHARLES PARISH	LA	PSD-LA-890	2879	42744	43231	Chemical Manufacture	Emergency Flare	19.31	Natural Gas	0.4	mmbtu/h		Nitrogen Oxides (NOx)	10102	Proper design and operation	0				BACT-PSD	U	0			0			
	OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	BELMONT	OH	P0124972	2869	43455	43635	Petrochemical Complex	High Pressure Ground Flare (P003)	19.31	Natural gas	1.8	MMBTU/H	pressure, multi-point, staged ground flare. The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting,	Nitrogen Oxides (NOx)	10102	use of natural gas as pilot light fuel	0.536	T/YR		PER ROLLING 12 MONTH PERIOD. SEE NOTES.	BACT-PSD	U	0			0			The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.
	OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	BELMONT	OH	P0124972	2869	43455	43635	Petrochemical Complex	Low Pressure Ground Flare (P004)	19.31	Natural gas	0.78	MMBTU/H	pressure, multi-point, staged ground flare. The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting,	Nitrogen Oxides (NOx)	10102	use of natural gas as pilot light fuel	0.232	T/YR		PER ROLLING 12 MONTH PERIOD. SEE NOTES.	BACT-PSD	U	0			0			The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.
	TX-0575	SABINA PETROCHEMICALS LLC	SABINA PETROCHEMICALS LLC	JEFFERSON	TX	41945, N018M1	2869	40410	42502	C4 OLEFINS COMPLEX BRIEF PLANT DESCRIPTION/NARRATIVE (FOR EXAMPLE - CHEMICAL PLANT, STEEL MILL, PAINT MANUFACTURING, ETC.): C4 OLEFINS COMPLEX BRIEF EMISSION SOURCE(S) DESCRIPTION (FOR EXAMPLE - BOILER, PAINT SPRAY BOOTH, FURNACE, ETC.): STORM WATER TANK, COOLING TOWER, FUGITIVES, TANK TRUCK LOADING , AND ABOILER, TYPE(S) OF FUEL USED AT THIS FACILITY: DESCRIPTION OF THE POLLUTION ABATEMENT STRATEGY (FOR EXAMPLE - FABRIC FILTER, ESP, CARBON ADSORBERS, POWDER COATINGS, ETC.): HIGH AND LOW-PRESSURE FLARES, AND AN AMMONIA SCRUBBER FACILITY NOTES: THE FACILITY INCLUDES A BUTADIENE UNIT WITH A MAXIMUM CAPACITY OF 1 BILLION POUNDS PER YEAR OF BUTADIENE, AN ALKYLATE (MIXTURE OF OCTANES) UNIT (REFERRED TO AS INALK UNIT) WITH A MAXIMUM CAPACITY OF 1 BILLION POUNDS PER YEAR OF ALKYLATE, AND ANCILLARY SUPPORT EQUIPMENT.	HIGH AND LOW PRESSURE FLARES	19.31	NATURAL GAS	1600	T/YR	INCREASES FROM THE FLARES ARE DUE TO THE COMBUSTION OF NATURAL GAS USED AS SWEEP GAS IN THE FLARE HEADER SYSTEM. THE NATURAL GAS ALSO HELPS TO MAINTAIN THE MINIMUM HEATING VALUE NECESSARY TO ENSURE DESTRUCTION OF THE VOCS IN THE VENT STREAMS. THE NATURAL GAS FLOW WAS NOT COMPLETELY ACCOUNTED FOR IN THE ORIGINAL PERMIT REPRESENTATIONS AND IS BEING ADDED TO THE PERMIT AT THIS	Nitrogen Oxides (NOx)	10102		9.07	T/YR		ANNUAL	LAER	Y	0			0			

Comments	RBLCID	FACILITY_NAME	CORPORATE_OR_COMPANY_NAME	FACILITY_COUNTY	FACILITY_STATE	PERMIT_NUM	SIC_CODE	PERMIT_ISSUANCE_DATE	DATE_DETERMINATION_LAST_UPDATED	FACILITY_DESCRIPTION	PROCESS_NAME	PROCCESS_TYPE	PRIMARY_FUEL	THROUGHPUT	THROUGHPUT_UNIT	PROCESS_NOTES	POLLUTANT	CAS_NUMBER	CONTROL_METHOD_DESCRIPTION	EMISSION_LIMIT_1	EMISSION_LIMIT_1_UNIT		EMISSION_LIMIT_1_AVG_TIME_CONDITION	CASE-BY-CASE_BASIS	COMPLIANCE_VERIFIED	EMISSION_LIMIT_2	EMISSION_LIMIT_2_UNIT	EMISSION_LIMIT_2_AVGERAGE_TIME_CONDITION	STANDARD_EMISSION_LIMIT	STANDARD_EMISSION_LIMIT_UNIT	STANDARD_LIMIT_AVERAGE_TIME_CONDITION	POLLUTANT_COMPLIANCE_NOTES
	TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	BRAZORIA	TX	118239, N200	2813	42095	42506	Ammonia production with hydrogen imported	ammonia flare	19.31	Natural gas, ammonia, hydrogen	106396	MMBtu/yr	throughput limit A flare is used to combust unreacted hydrogen, destroy impure hydrogen/ammonia streams, and to control process shutdowns. The Flare is claimed to achieve 99% control for ammonia. Best Available Control Technology (BACT) for carbon monoxide (CO) from flares is good combustion practices. Sulfur Dioxide (SO2) emissions are controlled with the use of pipeline quality natural gas as fuel gas. The only volatile organic compound (VOC)	Nitrogen Oxides (NOx)	10102	no control	223.41	LB/H	0.11053		LAER	U	5.39	T/YR		0			The TPY emission rate is based on all operating scenarios. the lb/hr rate is based on worst case MSS scenarios.
	TX-0815	PORT ARTHUR ETHANE SIDE CRACKER	TOTAL PETROCHEMICALS & REFINING USA, INC.	JEFFERSON	TX	122353, PSDTX1426, GHGPSDTX114	2869	42752	43055	Ethylene Production	Multi Point Ground Flare	19.31	NATURAL GAS	0		Applicant will obtain an AMOC and AMEL prior to startup of the MPGF	Nitrogen Oxides (NOx)	10102	Good Combustion Practices & Design	94.27	T/YR			BACT-PSD	U	0			0			Emission rate of 94.27 tpy is the sum of 35.86 tpy NOx for routine operations and 58.41 tpy NOx for MSS operations.
	*TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	JEFFERSON	TX	PSDTX843M2, PSDTX860M2, GHGPSD	2869	43264	43773	Increase in supplemental natural gas to two flares in a cap, 3 other flares, with attendant increase in fugitive and MSS emissions from associated piping.	High and Low Pressure Flare cap	19.31		0			Nitrogen Oxides (NOx)	10102	Meet the design and operating requirements of 40 CFR Â§60.18.	0				BACT-PSD	U	0			0			
	*TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	JEFFERSON	TX	PSDTX843M2, PSDTX860M2, GHGPSD	2869	43264	43773	Increase in supplemental natural gas to two flares in a cap, 3 other flares, with attendant increase in fugitive and MSS emissions from associated piping.	UDEX FLARE	19.31		0			Nitrogen Oxides (NOx)	10102	Meet the design and operating requirements of 40 CFR Â§60.18.	0				BACT-PSD	U	0			0			
	*TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	JEFFERSON	TX	PSDTX843M2, PSDTX860M2, GHGPSD	2869	43264	43773	Increase in supplemental natural gas to two flares in a cap, 3 other flares, with attendant increase in fugitive and MSS emissions from associated piping.	PARAXYLENE FLARE	19.31		0			Nitrogen Oxides (NOx)	10102	Meet the design and operating requirements of 40 CFR Â§60.18.	0				BACT-PSD	U	0			0			
	*TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	JEFFERSON	TX	PSDTX843M2, PSDTX860M2, GHGPSD	2869	43264	43773	Increase in supplemental natural gas to two flares in a cap, 3 other flares, with attendant increase in fugitive and MSS emissions from associated piping.	C & S FLARE	19.31		0			Nitrogen Oxides (NOx)	10102	Meet the design and operating requirements of 40 CFR Â§60.18.	0				BACT-PSD	U	0			0			
	*TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	BRAZORIA	TX	153106 AND N268	2869	43711	43749	Addition of new polyethylene manufacturing plant at the Dow Freeport Site.	FLARE	19.31		0			Nitrogen Oxides (NOx)	10102	GOOD COMBUSTION PRACTICES	0				BACT-PSD	U	0			0			
	*TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	HARRIS	TX	N266, PSDTX1542, GHGPSDTX183	2869	43717	43741	new propane dehydrogenation (PDH) unit and a new polypropylene (PP) production unit: (1)The action concerns the authorization for the PDH unit is under TCEQ Project No. 286455 with assigned Permit Nos. 152181, PSDTX1540, GHGPSDTX182, and N264. (2)The action concerns the authorization for the PP unit is under TCEQ Project No. 286467 with assigned Permit Nos. 152184, PSDTX1542, GHGPSDTX183and N266. evaluated as a single project for purposes of evaluating major NSR. The project is subject to Nonattainment New Source Review (NNSR) requirements for significant increases of VOC (an ozone precursor) and is subject to Prevention of Significant Deterioration (PSD) requirements for CO and particulate (PM, PM10 and PM2.5). Affected units with no modifications include the wastewater treatment system (WWTS) and C3 Splitter project of the Olefin plants	Multi Point Ground Flare	19.31	natural gas	0			Nitrogen Oxides (NOx)	10102	good combustion practices, design, natural gas fuel	0				BACT-PSD	U	0			0			
	*TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	HARRIS	TX	N266, PSDTX1542, GHGPSDTX183	2869	43717	43741	new propane dehydrogenation (PDH) unit and a new polypropylene (PP) production unit: (1)The action concerns the authorization for the PDH unit is under TCEQ Project No. 286455 with assigned Permit Nos. 152181, PSDTX1540, GHGPSDTX182, and N264. (2)The action concerns the authorization for the PP unit is under TCEQ Project No. 286467 with assigned Permit Nos. 152184, PSDTX1542, GHGPSDTX183and N266. evaluated as a single project for purposes of evaluating major NSR. The project is subject to Nonattainment New Source Review (NNSR) requirements for significant increases of VOC (an ozone precursor) and is subject to Prevention of Significant Deterioration (PSD) requirements for CO and particulate (PM, PM10 and PM2.5). Affected units with no modifications include the wastewater treatment system (WWTS) and C3 Splitter project of the Olefin plants	Elevated Flare	19.31	natural gas	0			Nitrogen Oxides (NOx)	10102	good combustion practices, design, natural gas fuel	0				BACT-PSD	U	0			0			
	*TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	HARRIS	TX	N264, PSDTX1540, GHGPSDTX182	2869	43717	43741	new PDH unit. Includea four heaters, one ground flare, one steam-assisted elevated flare, one cooling tower, one CCR vent scrubber, one ammonia vent scrubber, catalyst handling systems, several tanks/drums, wastewater, fugitive components and MSS activities.	MULTIPOINT GROUND FLARE	19.31	NATURAL GAS	0			Nitrogen Oxides (NOx)	10102	Good combustion practices, proper design and operation	0				BACT-PSD	U	0			0			
	*TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	HARRIS	TX	N264, PSDTX1540, GHGPSDTX182	2869	43717	43741	new PDH unit. Includea four heaters, one ground flare, one steam-assisted elevated flare, one cooling tower, one CCR vent scrubber, one ammonia vent scrubber, catalyst handling systems, several tanks/drums, wastewater, fugitive components and MSS activities.	MEROX ELEVATED FLARE	19.31	NATURAL GAS	0			Nitrogen Oxides (NOx)	10102	Good combustion practices, proper design and operation	0				BACT-PSD	U	0			0			