

## Special Conditions

Permit Number 174650 and N312

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 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.

### Federal Applicability

3. 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 VVa, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.
  - C. Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
4. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (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 F, National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry.
  - C. 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.
  - D. Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks.
  - E. Subpart YY, National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards.
  - F. Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

### Production Limits

5. The production rates shall not exceed 2.2 billion pounds per rolling 12-months of all products at the Ethylene Derivatives Unit. In order to assure compliance with this condition, records shall be kept of daily production rates (pounds per rolling 12-months) and the cumulative annual production

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(pounds per year). These records shall be maintained at the plant site for a period of at least five years and be made available to representatives of the Texas Commission on Environmental Quality (TCEQ) upon request.

## Fuel Specifications

7. The Heaters (F-7360) shall be fired with either hydrogen-rich plant fuel gas or pipeline natural gas.
  - A. Hydrogen-rich plant fuel gas shall contain no sulfur.
  - B. Pipeline natural gas shall contain no more than 5.0 grains of total sulfur per 100 dry standard cubic feet (dscf).
8. The fuel for the emergency engine (EPN EF2GEN1) is limited to ultra-low sulfur diesel (ULSD) fuel with a sulfur content of 15 ppmw or less as specified in 40 CFR §80.6.
9. ULSD shall be sampled every 6 months to determine total sulfur and net heating value. Test results from the fuel supplier or current valid purchasing contract with total sulfur and heating value may be used to satisfy this requirement.

Upon request by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel fired in the heater and emergency engine or shall allow air pollution control agency representatives to obtain a sample for analysis.

## Emission Standards and Operational Specifications

10. The following requirements shall apply to the heaters:
  - A. Fuel gas for the Reactor Feed Heater (EPN EF7360) shall be limited to hydrogen-rich plant fuel gas or pipeline natural gas. Records of fuel type and duration shall be maintained.
  - B. Heater F-7361 (FIN EF7361) shall be electric and have no emissions.
  - C. The permit holder shall install and operate a totalizing fuel flow meter to measure the fuel usage for the heaters and fuel usage for each shall be recorded monthly. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to within 5 percent. Quality assured (or valid) data must be generated when the 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 unit operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.
  - D. The requirements of Paragraph C of this Special Condition may be satisfied through compliance with the applicable fuel flow monitoring requirements of 30 TAC § 117.340(a).
11. The Reactor Feed Heater (EPN EF7360) shall not exceed 0.04 lb NO<sub>x</sub>/MMBtu on a 1-hour average and when firing carbon based fuels CO concentrations shall not exceed 400 ppm @ 3% O<sub>2</sub> on a 1-hr average and 50 ppm @ 3% O<sub>2</sub> on a rolling 12-month average.
  - A. The firing rate of the heater shall not exceed 20.04 MMBtu/hr.

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- B. Startup and shutdown emissions as defined in this Special Condition are excluded from the limits listed above. The emissions from startup and shutdown shall not exceed the hourly emission rates authorized as routine (EPN EF7360) in the MAERT.
    - (1) A planned startup is defined as the period of time to reach operating temperature. A planned startup shall not exceed 4 hours per event.
    - (2) A planned shutdown is defined as the period of time necessary to remove fuel from heater. A planned shutdown shall not exceed 4 hours per event.
12. The Reactor Feed Heater (EPN EF7360) shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.

**Emergency Engine**

13. The diesel-fired emergency engine (EPN EF2GEN1) shall comply with the following requirements:
- A. Emissions from the diesel emergency engine shall not exceed 0.50 grams per horsepower-hour (g/hp-hr) of nitrogen oxides (NO<sub>x</sub>) and 2.60 g/hp-hr of carbon monoxide (CO).
  - B. Engine operation shall be limited to 100 hours per rolling 12-month period during non-emergency situations.
  - C. Testing or maintenance on the engines between 6:00 am and noon shall be additionally restricted as required under 30 TAC §117.310(f).
  - D. Each engine shall be equipped with a non-resettable run time meter. Run time hours shall be recorded monthly.
  - E. Records of maintenance activities and the duration of the activity shall be kept for five years.

**Storage Tanks**

14. Storage tanks throughput and service shall be limited to the following: **(NA)**

Tank Identifier	Tank Type	Service	Fill/Withdrawal rate (gallons/hour)	Rolling 12-Month Throughput (gallons)
D-7310	Pressurized	n-hexane 1016	2,500	60,000
D-7311	Pressurized	n-hexane 11	2,500	150,000
D-7316	Pressurized	n-hexane 1016	2,500	60,000
D-7384	Pressurized	Gasoline	1,532	39,657
D-7383	Pressurized	Spent Caustic	23	79,009
D-7386	Pressurized	Heavy Oil	299	6,768

15. Storage tanks are subject to the following requirements: The control requirements specified in parts A–D 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. **(NA)**

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- A. 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.
- B. 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.
- C. Storage tanks D-7310, D-7311, D-7316, D-7384, D-7383, D-7386 shall be pressurized.
- D. All vents from storage tanks D-7310, D-7311, D-7316, D-7384, D-7383, and D-7386 shall be routed to the OP1 Flare (EPN 38E01).

16. Emissions from tanks shall be calculated using the following methods: **(NA)**

- A. The TCEQ February 2020 Guidance for "Estimating Short Term Emission Rates from Fixed Roof Tanks"
- B. The TCEQ February 2020 Guidance for "Estimating Short Term Emission Rates from Floating Roof Tanks"
- C. AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7, Section 7.1 – Organic Liquid Storage Tanks dated June 2020 for annual emissions.

Sample calculations from the application shall be attached to a copy of this permit at the plant site.

17. Wastewater tanks TK38010 and TK38011 shall be operated in accordance with the conditions outlined in NSR Permit Nos. 1768, PSDTX1272, and N142M1 for routine and MSS operations.

### Cooling Tower

18. The OP1 Cooling Tower (EPN 38E11) shall be operated in accordance with the conditions outlined in NSR Permit Nos. 1768, PSDTX1272, and N142M1 for routine and MSS operations.

### Fugitive Monitoring

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

19. Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment: **(NA)**

- 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 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. 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 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 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.

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, 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 nonaccessible 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.

#### **Analyzer Vents**

20. Analyzer sample system vents or speed loops (EPN EETHDRVANL) shall be equipped with vapor recovery or liquid recovery systems (vapor samples or liquids samples route back to process or flare). Analyzer (gas chromatographs) vapor sample loops shall depressurize to atmospheric pressure during sample injection only and shall be routed to the flare or process during periods when a sample is not being injected.

#### **Flare**

21. The OP1 Flare (EPN 38E01) shall be designed and operated in accordance with the requirements outlined in NSR Permit Nos. 1768, PSDTX1272, and N142M1.

Before this unit (EPN 38E01) can begin operation under this permit, Permit Nos. 1768, PSDTX1272, and N142M1 shall be updated to be in compliance in MACT YY and/or Alternate Method Of Compliance (AMOC) No. 157.

22. The permit holder shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate and composition of Vent Gas from the Ethylene Derivatives Unit (EDU) in the header or headers feeding the flare. This system must also be able to continuously analyze pressure and temperature at each point of Vent Gas flow measurement. Different flow calculation methodology may be used to quantify volume of different gaseous streams that make up the Vent Gas provided that the flow rates of all gas streams that contribute to the Vent Gas are determined. Flow must be calculated in scfm and pounds per hour such that compliance with the emission rates on the MAERT can be demonstrated. **(NA)**

#### **Wastewater Treatment Facilities**

23. The wastewater treatment unit (EPN MECUWWTP) shall be designed and operated in accordance with the requirements outlined in NSR Permit No. 49120. **(NA)**

**Initial Demonstration of Compliance**

24. The permit holder 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 Reactor Feed Heater (EPN EF7360) to demonstrate compliance with the MAERT. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:

- (1) Proposed 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.
- (6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.
- (7) Procedure/parameters to be used to determine worst case emissions

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 the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from the Reactor Feed Heater (EPN EF7360) to be tested for include (but are not limited to) NO<sub>x</sub>, CO, and O<sub>2</sub>.
- C. Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after initial start-up of the facilities (or increase in production, as appropriate) and at such other times (identify the need for any periodic sampling here) as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.
- D. The facility being sampled shall operate at maximum firing rate during stack emission testing. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if the heaters operate at a firing rate that is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

- E. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:  
  
One copy to the appropriate TCEQ Regional Office.  
One copy to each local air pollution control program.
- F. Sampling ports and platform(s) shall be incorporated into the design of (source stack and EPN) according to the specifications set forth in the attachment entitled "Chapter 2, Guidelines For Stack Sampling Facilities" of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual. Alternate sampling facility designs must be submitted for approval to the TCEQ Regional Director.

#### **Planned Maintenance, Startup and Shutdown Operations**

- 25. This permit authorizes the emissions from the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment A) attached to this permit. **(NA)**

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 A 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 A 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.

- 26. Process units and facilities shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements: **(NA)**
  - 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. If the VOC partial pressure is greater than 0.50 psi at either the normal process 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. 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 A, 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 Special Condition No. 26 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.

All instances of venting directly to atmosphere per Special Condition 28.E 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

27. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below. **(NA)**

- A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 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:  
  
$$\text{VOC Concentration} = \text{Concentration as read from the instrument} * \text{RF}$$
  
  
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 5 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 2 samples taken at least 5 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 of use with a certified pentane gas standard at 25% of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
- (2) A functionality test shall be performed on each detector within 24 hours of use with a certified gas standard at 25% of the LEL for pentane. The LEL monitor shall read no lower than 90% 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 25% of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95% of that for pentane.

28. This condition applies only to piping and components subject to leak detection and repair monitoring requirements identified in other NSR 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 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; **(NA)**

- 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 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.

29. Additional occurrences of MSS activities authorized by this permit (see Attachment A) 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. **(NA)**

30. 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 Conditions 24 through 28 must be used

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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. **(NA)**

**Recordkeeping and Reporting**

31. The permit holder shall calculate emissions from each emission point monthly to show compliance with the rolling 12-month annual emission limits on the attached MAERT.
32. Individual emission points which have allowable emissions on the attached MAERT of less than 1 ton per year are exempt from the requirement to calculate emissions on a monthly basis.
33. The records required by these special conditions shall be maintained in hard copy or electronic format and shall be maintained for at least five years rather than the two-year period specified in General Condition No. 7. These records shall be made immediately available at the request of personnel from the TCEQ or any air pollution control agency with jurisdiction.

**Netting and Offsets**

34. The permit holder shall use 24.8 tons per year (tpy) of VOC credits to offset the 19.01 tpy VOC project emission increase for the facilities authorized by this permit at a ratio of 1.3 to 1.0.
35. 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: February 25, 2026

**Permit Numbers 174650 and N312**

Attachment A

MSS Activity Summary

<b>Facilities</b>	<b>Description</b>	<b>Emission Activity</b>	<b>EPN</b>
all process units	process unit purge/degas/drain	Vent to vapor recovery system	N/A
all process units	process unit purge/degas/drain (high pressure vent gas recovery not available)	MSS venting to Flare	38E01
all process units	Reactor clearing	Vent to atmosphere	ENMSSROUT

Date: February 25, 2026

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Attachment B

Routine Maintenance Activities

Process & Storage Vessel cleaning/repair/replacement

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

The R-7360 reactors decoking

Date: February 25, 2026