# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## EXAMPLE A

**COMBINED**

**NOTICE OF PUBLIC MEETING**

**AND**

**NOTICE OF APPLICATION AND PRELIMINARY DECISION
FOR AIR QUALITY PERMITS**

**AIR QUALITY PERMIT NUMBERS 122362, PSDTX1430M2, AND GHGPSDTX209**

**APPLICATION AND PRELIMINARY DECISION.** Enbridge Ingleside Oil Terminal, LLC, 915 N Eldridge Pkwy Ste 1100, Houston, TX 77079-2703, has applied to the Texas Commission on Environmental Quality (TCEQ) for an amendment to State Air Quality Permit 122362, modification to Prevention of Significant Deterioration (PSD) Air Quality Permit PSDTX1430M2, and issuance of Greenhouse Gas (GHG) PSD Air Quality Permit GHGPSDTX209 for emissions of GHGs, which would authorize modification to the Enbridge Ingleside Oil Terminal located at 1450 Lexington Blvd, Ingleside, San Patricio County, Texas 78362. The existing facility will emit the following air contaminants in a significant amount: greenhouse gases, nitrogen oxides, organic compounds and sulfur dioxide. In addition, the facility will emit the following air contaminants: carbon monoxide, hydrogen sulfide and particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less.

The degree of PSD increment predicted to be consumed by the existing facility and other increment-consuming sources in the area is as follows:

Sulfur Dioxide

| Maximum Averaging Time | Maximum Increment Consumed ($\mu g/m^3$) | Allowable Increment ($\mu g/m^3$) |
|---|---|---|
| 3-hour | 67 | 512 |
| 24-hour | 38 | 91 |

This application was submitted to the TCEQ on January 22, 2021. The executive director has determined that the emissions of air contaminants from the existing facility which are subject to PSD review will not violate any state or federal air quality regulations and will not have any significant adverse impact on soils, vegetation, or visibility. All air contaminants have been evaluated, and “best available control technology” will be used for the control of these contaminants.

The executive director has completed the technical review of the application and prepared a draft permit which, if approved, would establish the conditions under which the facility must operate. The permit application, executive director’s preliminary decision, draft permit, and the executive director’s preliminary determination summary and executive director’s air quality analysis, will be available for viewing and copying at the TCEQ central office, the TCEQ Corpus Christi regional office, and at the Sinton Public Library, 100 North Pirate Boulevard, Sinton, San Patricio County, Texas, beginning the first day of publication of this notice. The facility’s compliance file, if any exists, is available for public review at the TCEQ Corpus Christi Regional Office, 500 North Shoreline Boulevard, Suite 500, Corpus Christi, Texas. The application, including any updates, is available electronically at the following webpage: https://www.tceq.texas.gov/permitting/air/airpermit-applications-notices.

**INFORMATION AVAILABLE ONLINE.** These documents are accessible through the Commission's Web site at www.tceq.texas.gov/goto/cid: the executive director's preliminary decision which includes the draft permit, the executive director's preliminary determination summary, air quality analysis, and, once available, the executive director's response to comments and the final decision on this application. Access the Commissioners' Integrated Database (CID) using the above link and enter the permit number for this application. The public location mentioned above, Sinton Public Library, provides public access to the internet. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.205155,27.825091&level=13.

**PUBLIC COMMENT/PUBLIC MEETING. You may submit public comments to the Office of the Chief Clerk at the address below. The TCEQ will hold a public meeting on this application.** The TCEQ will consider all public comments in developing a final decision on the application. A public meeting will be held and will consist of two parts, an Informal Discussion Period and a Formal Comment Period. A public meeting is not a contested case hearing under the Administrative Procedure Act. During the Informal Discussion Period, the public will be encouraged to ask questions of the applicant and TCEQ staff concerning the permit application. The comments and questions submitted orally during the Informal Discussion Period will not be considered before a decision is reached on the permit application, and no formal response will be made. Responses will be provided orally during the Informal Discussion Period. During the Formal Comment Period on the permit application, members of the public may state their formal comments orally into the official record. At the conclusion of the comment period, all formal comments will be considered before a decision is reached on the permit application. A written response to all formal comments will be prepared by the executive director and will be sent to each person who submits a formal comment or who requested to be on the mailing list for this permit application and provides a mailing address. Only relevant and material issues raised during the Formal Comment Period can be considered if a contested case hearing is granted on this permit application.

**The Public Meeting is to be held:**

**Thursday, September 4, 2025 at 7:00 PM**
**Portland Community Center**
**2000 Billy G. Webb**
**Portland, Texas 78374**

Persons with disabilities who need special accommodations at the meeting should call the Office of the Chief Clerk at 512-239-3300 or 1-800-RELAY-TX (TDD) at least five business days prior to the meeting.

You may submit additional written public comments within 30 days of the date of newspaper publication of this notice in the manner set forth in the AGENCY CONTACTS AND INFORMATION paragraph below, or by the date of the public meeting, whichever is later.

**OPPORTUNITY FOR A CONTESTED CASE HEARING. You may request a contested case hearing regarding the portions of the application for State Air Quality Permit Number 122362 and for PSD Air Quality Permit Number PSDTX1430M2. There is no opportunity to request a contested case hearing regarding the portion of the application for GHG PSD Air Quality Permit Number GHGPSDTX209. A contested case hearing is a legal proceeding similar to a civil trial in a state district court. A person who may be affected by emissions of air contaminants, other than GHGs, from the facility is entitled to request a hearing. A contested case hearing request must include the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number; (2) applicant's name and permit number; (3) the statement "I/we request a contested case hearing;" (4) a specific description of how you would be adversely affected by the application and air emissions from the facility in a way not common to the general public; (5) the location and distance of your property relative to the facility; (6) a description of how you use the property which may be impacted by the facility; and (7) a list of all disputed issues of fact that you submit during the comment period. If the request is made by a group or association, one or more members who have standing to request a hearing must be identified by name and physical address. The interests the group or association seeks to protect must also be identified. You may also submit your proposed adjustments to the application/permit which would satisfy your concerns. Requests for a contested case hearing must be submitted in writing within 30 days following this notice to the Office of the Chief Clerk, at the address provided in the information section below.**

A contested case hearing will only be granted based on disputed issues of fact or mixed questions of fact and law that are relevant and material to the Commission's decisions on the application. The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. Issues that are not submitted in public comments may not be considered during a hearing.

**EXECUTIVE DIRECTOR ACTION.** The executive director may issue final approval of the application for the portion of the application for GHG PSD Air Quality Permit GHGPSDTX209. If a timely contested case hearing request is not received or if all timely contested case hearing requests are withdrawn regarding State Air Quality Permit Number 122362 and for PSD Air Quality Permit Number PSDTX1430M2, the executive director may issue final approval of the application. The response to comments, along with the executive director's decision on the application will be mailed to everyone who submitted public comments or is on a mailing list for this application, and will be posted electronically to the CID. If any timely hearing requests are received and not withdrawn, the executive director will not issue final approval of the State Air Quality Permit Number 122362 and for PSD Air Quality Permit Number PSDTX1430M2 and will forward the application and requests to the Commissioners for their consideration at a scheduled commission meeting.

**MAILING LIST.** You may ask to be placed on a mailing list to obtain additional information on this application by sending a request to the Office of the Chief Clerk at the address below.

**AGENCY CONTACTS AND INFORMATION.** Public comments and requests must be submitted either electronically at www.tceq.texas.gov/goto/comment, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC 105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040. You can also view our website for public participation opportunities at www.tceq.texas.gov/goto/participation.

Further information may also be obtained from Enbridge Ingleside Oil Terminal, LLC at the address stated above or by calling Mr. Austin Taylor, Sr Advisor Environment LP US Gulf Coast Terminals at (855) 385-6645.

Notice Issuance Date: July 16, 2025

**Special Conditions**

Permit Number 122362, PSDTX1430M2 and GHGPSDTX209

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 weight 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): **(08/18)**

    A. Subpart A, General Provisions.

    B. 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.

    C. Subpart Kc, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023. **(XX/XX)**

4. 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: **(08/18)**

    A. Subpart A, General Provisions.

    B. Subpart Y, National Emission Standards for Marine Tank Vessel Loading Operations

    C. Subpart EEEE, National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline).

5. If any condition of this permit is more stringent than the applicable regulations in Special Condition Nos. 3 and 4, then for the purposes of complying with this permit, the permit shall govern and be the standard by which compliance shall be demonstrated.

**Emission Standards and Operational Specifications**

6. Fuel gas combustion units as defined in 30 TAC §101.1, not including MSS combustion units using other fuels covered in the conditions of this permit, shall be fueled by pipeline quality natural gas containing no more than 0.2 grains of total sulfur per 100 dry standard cubic feet. The natural gas shall be sampled every 6 months to determine total sulfur and net heating value. Test results from the fuel supplier may be used to satisfy this requirement. Fuel gas volume used for each combustion device shall be monitored and recorded with records being updated on a monthly basis. **(XX/XX)**

7. Storage tank throughput and service shall be limited as follows: **(XX/XX)**

a. The simultaneous storage of condensate in storage tanks is limited to 12 tanks at any given time.

b. Internal floating roof tank withdrawal rates are limited to the following

| Tank EPN | Service | Withdraw Rate (barrels/hr) |
|---|---|---|
| T-101 | Crude | 40,000 |
| T-102 | Crude | 40,000 |
| T-103 | Crude/Condensate | 40,000 |
| T-104 | Crude | 40,000 |
| T-105 | Crude | 40,000 |
| T-106 | Crude/Condensate | 40,000 |
| T-107 | Crude | 40,000 |
| T-108 | Crude | 40,000 |
| T-109 | Crude/Condensate | 40,000 |
| T-110 | Crude/Condensate | 40,000 |
| T-111 | Crude/Condensate | 40,000 |
| T-112 | Crude/Condensate | 40,000 |
| T-113 | Crude/Condensate | 40,000 |
| T-114 | Crude/Condensate | 40,000 |
| T-115 | Crude/Condensate | 40,000 |
| T-116 | Crude/Condensate | 40,000 |
| T-117 | Crude/Condensate | 40,000 |
| T-118 | Crude/Condensate | 40,000 |
| T-119 | Crude/Condensate | 40,000 |
| T-120 | Crude/Condensate | 40,000 |
| T-121 | Crude/Condensate | 40,000 |
| T-122 | Crude/Condensate | 40,000 |
| T-123 | Crude/Condensate | 40,000 |
| T-124 | Crude/Condensate | 40,000 |
| T-125 | Crude/Condensate | 40,000 |
| T-126 | Crude/Condensate | 40,000 |
| T-127 | Crude/Condensate | 40,000 |
| T-128 | Crude/Condensate | 40,000 |
| T-129 | Crude/Condensate | 40,000 |
| T-130 | Crude/Condensate | 40,000 |
| T-131 | Crude/Condensate | 40,000 |
| T-132 | Crude/Condensate | 40,000 |
| T-133 | Crude/Condensate | 40,000 |
| T-134 | Crude/Condensate | 40,000 |
| T-135 | Crude/Condensate | 40,000 |

| Tank EPN | Service | Withdraw Rate (barrels/hr) |
|---|---|---|
| T-136 | Crude/Condensate | 40,000 |
| T-137 | Crude/Condensate | 40,000 |
| T-138 | Crude/Condensate | 40,000 |
| T-139 | Crude/Condensate | 40,000 |
| T-140 | Crude/Condensate | 40,000 |
| T-141 | Crude/Condensate | 40,000 |
| T-142 | Crude/Condensate | 40,000 |
| T-143 | Crude/Condensate | 40,000 |
| T-144 | Crude/Condensate | 40,000 |
| T-201 | Crude | 1,000 |
| T-202 | Crude | 1,000 |
| RT-1 | Crude/Condensate | 12,600 |
| RT-2 | Crude/Condensate | 12,600 |

c. Fill rates for the bunker oil tanks are limited to the following:

| Tank EPN | Service | Fill Rate (barrels/hr) |
|---|---|---|
| BT-910 | Bunker Oil (No. 6 Fuel Oil) | 4,000 |
| BT-911 | Bunker Oil (No. 6 Fuel Oil) | 4,000 |
| BT-912 | Bunker Oil (No. 2 Fuel Oil/Diesel) | 4,000 |

8. Storage tanks are subject to the requirements of this Special Condition 8, except that: 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. Volatile organic liquid storage tanks constructed, reconstructed, or modified after October 4, 2023 shall comply with the requirements of CFR Part 60, Subpart Kc as applicable. **(XX/XX)**

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.

9. Each tank shall be designed to completely drain its entire contents to a sump in a manner that leaves no more than 8 gallons of free-standing liquid in the tank sump.

10. The holder of this permit shall reduce the temperature and/or vapor pressure of the stored material as needed to maintain a true vapor pressure of less than 11.0 psia at actual storage conditions in each storage tank. Storage of any product with a true vapor pressure of 11.0 psi or greater at ambient conditions is not authorized by this permit.

11. The permit holder shall monitor the dissolved hydrogen sulfide concentration of each incoming crude oil stock prior to delivery to each crude oil tank using ASTM D7621, UOP163, lead acetate calibrated colorimetric tape (0-100 ppmw) to measure the concentration, or an alternative method approved by TCEQ. **(XX/XX)**

A. Monitoring shall be continuous throughout the delivery period for each crude oil or condensate arriving into the storage tanks, beginning 15 minutes prior to the initiation of flow in the delivery pipeline and ending not sooner than 15 minutes after the termination of delivery flow.

(1) Sampling shall occur at least once every 15 minutes

(2) Concentration data shall be reduced to block one-hour averages

If continuous sampling is not used or is unavailable, after a tank has received a crude or condensate shipment, crude or condensate samples must be collected from the top, middle, and bottom of the tank and analyzed for H2S by ASTM D7621, UOP163, or an alternative method approved by TCEQ.

B. The dissolved hydrogen sulfide in the crude oil and condensate delivered to and stored in the tanks shall not exceed 50 parts per million by weight (ppmw) on a block one-hour average basis.

C. If the dissolved hydrogen sulfide measured in the incoming crude or condensate exceeds 10 ppmw on a block one-hour average basis, the permit holder shall treat the crude oil or condensate in the tank(s) receiving that crude oil or condensate before loading it into marine vessels. In-tank treatment must reduce the dissolved hydrogen sulfide in the stored crude oil or condensate to no more than 10 ppmw

(1) Upon completion of in-tank treatment to reduce dissolved hydrogen sulfide concentration to no more than 10 ppmw, the permit holder shall sample and analyze the crude oil or condensate at three locations (top, middle, bottom) within the tank using one of the approved analytical methods allowed by this Special Condition 11.

(2) If any of these three samples exceeds 10 ppmw, additional treatment and confirmation sampling must be conducted until such time as all three in-tank sample results are not more than 10 ppmw dissolved hydrogen sulfide.

The permit holder shall maintain records of continuous monitoring and any such in-tank treatment, including the treatment date, the treatment method, the confirmation sampling locations, and the sampling results.

12. The permit holder shall maintain an emissions record which includes calculated emissions of VOC and $H_2S$ 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, liquid monthly average temperature in degrees Fahrenheit, VOC and $H_2S$ vapor pressure at the monthly average material temperature in psia, liquid throughput for the previous month and year-to-date. Records of monthly average liquid temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

The emissions from storage tanks shall be calculated using U.S. EPA AP-42, Compilation of Air Pollution Emission Factors, Chapter 7- Liquid Storage Tanks dated October 2024 (or later edition) and the permit application. Sample calculations from the application shall be attached to a copy of this permit at the plant site.

**Marine Loading**

13. The marine (barge and ship) loading of crude oil and condensate is limited to a yearly throughput of 919,440,000 barrels. Marine (barge and ship) loading of bunker oils is limited to a yearly throughput of 2,880,000 barrels. **(XX/XX)**

14. The loading of barges and ships is limited to loading crude oil, condensate, and bunker oil. All vapors generated from marine loading of crude oil and condensate shall be routed to the marine loading vapor control system (Vapor Combustor EPNs VCU-1, VCU-2, VCU-3, VCU-5, VCU-6, VCU-7 or VCU-8). The marine loading vapor combustors shall achieve a VOC destruction removal efficiency (DRE) of 99.9%. **(XX/XX)**

The maximum hourly crude or condensate marine loading rate at any time shall not exceed a combined loading rate of 180,000 bbl per hour (bbl/hr). The maximum hourly bunker oil loading rate at any time shall not exceed a combined loading rate of 15,000 bbl/hr. **(XX/XX)**

For products with vapor pressure greater than 0.5 psia: VOC from ship and ocean-going barge loading must be collected with at least 99.9% efficiency and VOC from inland barge loading must be collected with 100% efficiency.

15. All loading lines (hoses) and connectors shall be visually inspected for any defects prior to hookup. Lines and connectors that are visibly damaged shall be removed from service. Operations shall cease immediately upon detection of any liquid leaking from the lines or connections. Flanged connections shall be used for all loading operations. The following actions shall be taken prior to removing loading lines/hoses from marine vessels and shore facilities.

   A. After the transfer is complete, the loading line/hose shall be isolated at the connection to the shore piping. The loading line/hose shall be vented at the shore piping and shall be gravity drained into the marine vessel per the site operating procedure.

   B. The loading line/hose may be disconnected from the shore and/or marine vessel piping after the liquid has been removed to the extent possible by gravity draining to the vessel being loaded. If it is necessary to further empty the line/hose, any residual liquid in the line/hose shall be immediately drained directly into a covered sump. If the line/hose is not emptied, the open end(s) of the line/hose shall be immediately capped, plugged, or blinded to prevent leakage.

   C. After the loading line/hose has been removed from the vessel, the vapor return line shall be immediately isolated.

   The actions shall be documented as part of the loading procedure.

16. Marine vessels shall not be loaded unless the vapor collection system is properly connected, and the entire collection and destruction system is working as designed.

17. For all non-inerted vessels, all vapors associated with marine loading shall be routed through a vacuum-assisted collection system as specified below **(XX/XX)**

   A. Before loading a marine vessel with a VOC which has a vapor pressure equal to or greater than 0.5 pounds per square inch absolute (psia) at 95°F or the loading temperature, whichever is higher, the owner or operator of the marine terminal shall verify that the marine vessel has passed an annual vapor tightness test as specified in 40 CFR §63.565(c) (September 19, 1995) or 40 CFR §61.304(f) (October 17, 2000) within the previous twelve months.

   B. The marine loading vapor collection system shall be operated such that the vacuum maintained in the collection system during loading is no less than 1.5 inches of water and that the vessel being loaded is also under a vacuum.

   C. The vacuum monitor shall be installed, calibrated at least annually, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of ±5 percent of the vacuum being measured or ±0.15 inches of water.

   D. A pressure measurement device shall be installed as close as possible to the vessel's vapor return port to continuously monitor and record the vacuum while loading is taking place. The collection system vacuum shall be continuously monitored and recorded at least once every 6 minutes while loading is occurring. The monitoring device shall be accurate to, and shall be calibrated at least annually in accordance with, the manufacturer's specifications.

   E. Quality-assured (or valid) data must be generated when loading is occurring. 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 barge loading is occurring over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

18. VOC collection efficiency tests of inerted ocean-going marine vessels designated as very large crude carriers (VLCCs) shall be conducted as follows to demonstrate a collection efficiency of 99.9% as represented in the permit application. (This testing has been completed effecitive April 15, 2019) **(XX/XX)**

A. Testing shall be conducted using the protocol agreed to by the Executive Director on June 22, 2015. Any revision to the approved testing protocol shall require approval from the Executive Director prior to implementation. The permittee shall maintain a copy of the approved protocol on site.

B. Complying test results shall be obtained in accordance with the protocol for a minimum of one vessel. The test shall be conducted within twelve months of the first loading of an inerted ocean-going marine vessel.

C. The results of the test shall be submitted to the TCEQ Regional Office with a copy to the TCEQ Air Permits Division within 60 days after completion of the test.

D. The TCEQ Regional Office must be notified at least 48 hours prior to testing. The facility owner or operator may request a waiver from the 48 hour advance notification requirement from the TCEQ Regional Office.

E. The permit holder shall maintain the following records for each ship tested for a period of 5 years from the date of testing:

(1) The most recent vapor tightness certificate;

(2) A recent, completed Standard Tanker Chartering Questionnaire form (Q88); and

(3) Records of each incidence of testing conducted in accordance with this condition.

19. The following additional requirements apply to loading of a VOC which has a vapor pressure equal to or greater than 0.5 pounds per square inch absolute (psia) under actual storage conditions onto inerted marine vessels with a 99.9% collection efficiency (ships and ocean-going barges). **(12/19)**

A. Before loading, the owner or operator of the marine terminal shall verify that the marine vessel has passed an annual vapor tightness test as specified in 40 CFR §63.565(c) (September 19, 1995) or 40 CFR §61.304(f) (October 17, 2000) within the previous twelve months, and received a recent, completed Standard Tanker Chartering Questionnaire form (Q88) or equivalent.

B. The pressure at the vapor collection connection of an inerted marine vessel must be maintained such that the pressure in a vessel's cargo tanks do not go below 0.2 pounds per square inch gauge (psig) or exceed 80% of the lowest setting of any of the vessel's pressure relief valves. The lowest vessel cargo tank or vent header pressure relief valve setting for the vessel being loaded shall be recorded. Pressure shall be continuously monitored while the vessel is being loaded. Pressure shall be recorded at fifteen-minute intervals.

C. VOC loading rates shall be recorded during loading. The loading rate must not exceed the maximum permitted loading rate.

D. During loading, the owner or operator of the marine terminal or of the marine vessel shall conduct audio, olfactory, and visual checks for leaks within the first hour of loading and once every 8 hours thereafter for on-shore equipment and on board the ship.

(1) If a liquid leak is detected during loading and cannot be repaired immediately (for example, by tightening a bolt or packing gland), then the loading operation shall cease until the leak is repaired.

(2) If a vapor leak is detected by sight, sound, smell, or hydrocarbon gas analyzer during the loading operation, then a "first attempt" shall be made to repair the leak. Loading operations need not be ceased if the first attempt to repair the leak is not successful provided that the first attempt effort is documented by the owner or operator of the marine vessel and a copy of the repair log is made available to a representative of the marine terminal.

(3) If the attempt to repair the leak is not successful and loading continues, emissions from the loading operation for that ship shall be calculated assuming a collection efficiency of 99%.

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.

20. The following conditions apply to loading tank trucks with crude oil or condensate. **(XX/XX)**

A. Loading of tank trucks with crude oil and condensate is limited to a maximum combined loading rate of 900 barrels per hour.

B. All lines and connectors shall be visually inspected for any defects prior to hookup. Lines and connectors that are visibly damaged shall be removed from service. Operations shall cease immediately upon detection of any liquid leaking from the lines or connections.

C. Loading emissions shall be vented to a vapor combustor (EPN VCU-4). The vapor combustor shall achieve a minimum of 99.9% control of the waste gas directed to it. **(12/18)**

D. Each tank truck shall pass vapor-tight testing every 12 months using the methods described in Title 40 Code of Federal Regulations Part 63 (40 CFR 63), Subpart R. The permit holder shall not allow a tank truck to be filled unless it has passed a leak-tight test within the past year as evidenced by a certificate which shows the date the tank truck last passed the leak-tight test required by this condition and the identification number of the tank truck. Tank trucks which pass the leak-tight test will achieve at least 99.2% collection efficiency. **(XX/XX)**

21. All loading shall be submerged.

22. The permit holder shall maintain and update monthly an emissions record which includes calculated emissions of VOC from all loading operations over the previous rolling 12-month period. The record shall include the loading spot, control method used, quantity loaded in gallons, name of the liquid loaded, vapor molecular weight, liquid temperature in degrees

Fahrenheit, liquid vapor pressure at the liquid temperature in psia, liquid throughput for the previous month and rolling 12 months to date. Records of VOC temperature are not required to be kept for liquids loaded from unheated tanks which receive liquids that are at or below ambient temperatures. Loading emissions shall be calculated using the methods used to determine the MAERT limits in the permit application for the facilities authorized by this permit. Sample calculations from the application shall be attached to a copy of the permit at the terminal.

**Piping, Valves, Connectors, Pumps, Agitators, and Compressors - 28VHP** (Revised 5/17/11)

23. 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 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:

(1) piping and instrumentation diagram (PID);

(2) a written or electronic database or electronic file;

(3) color coding;

(4) a form of weatherproof identification; or

(5) 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.

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 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 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 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.

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.

M. Enbridge per a voluntary audit, TCEQ investigation No. 1775675, identified the presence screwed connections two-inch diameter or larger. These screwed connections two-inch diameter or larger must be replaced with flanged or welded connections the next time such connector is taken out of service or during the next turnaround. A current list of these screwed connectors two-inch or larger must be maintained onsite, and the date of replacement of any such connectors with welded or flanged connections shall be identified, with the list updated quarterly. **(XX/XX)**

**28 CNTQ (Connectors Inspected Quarterly)**

24. In addition to the weekly physical inspection required by Special Condition No. 23.E, all accessible connectors in gas/vapor and light liquid service shall be monitored quarterly with an approved gas analyzer in accordance with Special Condition No. 23.F through 23.J.

A. Allowance for reduced monitoring frequencies.

(1) The frequency of monitoring may be reduced from quarterly to semiannually if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

(2) The frequency of monitoring may be reduced from semiannually to annually if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

B. 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 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.

**Vapor Combustors**

25. The vapor combustors (EPNs: VCU-1, VCU-2, VCU-3, VCU-5, VCU-6, VCU-7, and VCU-8) shall achieve 99.9 percent control of the carbon compounds directed to it during loading. Vapor combustor VCU-4 shall achieve 99.9 percent control of the carbon compounds directed to it during tank truck loading, tank roof landings due to inventory control or changes in tank service, and storage tank MSS activities. The permit holder shall operate the VCUs in the following manner: **(XX/XX)**

A. Vapor combustor control efficiency shall be ensured by maintaining the six-minute average temperature in the combustion chamber during marine loading, tank truck loading, tank roof landings due to inventory control or changes in tank service, and storage tank MSS activities above the values demonstrated by initial stack testing as specified below:

| Unit | Minimum Six-Minute Average Temperature (°F) | Initial Stack Test Date |
|---|---|---|
| VCU-1 | 1499 | April 7, 2017 |
| VCU-2 | 1479 | April 26, 2017 |
| VCU-3 | 1500 | April 7, 2017 |
| VCU-4 | 1461 | January 26, 2017 |
| VCU-5 | 1475 | October 7, 2020 |
| VCU-6 | 1507 | October 7, 2020 |
| VCU-7 | 1475 | October 6, 2020 |
| VCU-8 | 1475 | October 19, 2021 |

Should future stack testing be conducted in accordance with Special Condition 26, the six-minute average temperature shall be maintained during marine loading, tank truck loading, tank roof landings due to inventory control or changes in tank service, and storage tank MSS activities above the minimum one-hour average temperature maintained during the last satisfactory stack test.

B. The temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature monitor shall be installed, calibrated at least annually, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of ±2 percent of the temperature being measured expressed in degrees Fahrenheit or ±4.5ºF.

C. Quality assured (or valid) data must be generated when the VCU 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 VCU operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

D. Each vapor combustor shall be operated with no visible emissions and have a constant pilot flame during all times waste gas could be directed to it. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. Temperature data shall be recorded in accordance with Special Condition 25**Error! Reference source not found.**. Temperature data and/or monitored infrared sensor status shall be used in the control system logic interlocks to prohibit waste gas introduction to the VCU if a flame is not detected or operating temperature does not meet the requirements of Special Condition 25**Error! Reference source not found.**. 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.

E. The permit holder shall use good combustion practices, low nitrogen oxides (NOx) technology, good combustor design, and emission factors as follows. Compliance with the emission factors shall be determined via the results from the stack sampling conducted in accordance with Special Condition **Error! Reference source not found.** on the dates noted in Special Condition **Error! Reference source not found.**.:

(1) EPNs: VCU-1, VCU-2, VCU-3, VCU-5, VCU-6, VCU-7, and VCU-8:

(a) $NO_X$: 0.10 pounds (lbs) per million British thermal units (lbs/MMBtu) (block 1-hour average) and 0.05 lbs/MMBtu (annual average);

(b) CO: 0.25lbs/MMBtu (block 1-hour average) and 0.01 lbs/MMBtu (annual average).

(2) EPN: VCU-4:

(a) $NO_X$: 0.10 lbs/MMBtu;

(b) CO: 0.7 lbs/MMBtu.

(3) Carbon dioxide ($CO_2$) equivalents ($CO_{2e}$) for EPNs: VCU-1 through VCU-8: 206.42 lb/MMBtu.

26. 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 vapor combustor EPNs: VCU-1, VCU-2, VCU-3, VCU-4, VCU-5, VCU-6, VCU-7, and VCU-8 to demonstrate compliance with the MAERT. Initial stack sampling per the requirements of this condition was performed for VCU-1, VCU-2, VCU-3, VCU-4, VCU-5, VCU-6, VCU-7, and VCU-8 as noted in Special Condition 25.A. 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 (TCEQ) Sampling Procedures Manual and the U.S. (EPA) Reference Methods. **(XX/XX)**

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 vapor combustors to be tested for include (but are not limited to) VOC, NOx, and CO.

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. Each vapor combustor shall be sampled under the following conditions during stack emission testing: **(XX/XX)**

(1) For EPNs VCU-1, VCU-2, VCU-3, VCU-5, VCU-6, VCU-7, and VCU-8, each vapor combustor shall be sampled while loading marine vessels at the maximum loading rate.

(2) EPN VCU-4: the vapor combustor shall be sampled while refloating the tank roof of an uncleaned tank (heel present) that has been emptied to the maximum extent possible while filling at the maximum fill rate. 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.

(3) During subsequent operations, if the loading rate is greater than that recorded during the test period, stack sampling shall be performed at the new operating conditions within 120 days, except if each individual stack test result from the last

successful stack test demonstrated that the actual emissions are less than 80% of the MAERT emission limits, then subsequent operations may include up to a 5% increase in the loading rate to each VCU without requiring stack sampling at the new operating conditions unless required by the regional office. This sampling may be waived by the TCEQ Air Section Manager for the region. **(XX/XX)**

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, 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

**Continuous Demonstration of Compliance**

27. The following requirements apply to capture systems for vapor combustors (EPNs VCU-1, VCU-2, VCU-3, VCU-4, VCU-5, VCU-6, VCU-7, and VCU-8). **(XX/25)**

A. The permit holder shall perform one of the following:

(1) 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

(2) Once a year, verify the capture system is 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. The control device shall not have a bypass, or 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 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.

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.

**Tank Roof Landings**

28. This permit authorizes emissions from tank roof landings due to inventory control, changes in tank service or tank inspection/maintenance as identified in the permit application. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. The following requirements apply to tank roof landings.

A. If the tank is to be completely drained, the tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank and tank sump have been drained to the maximum extent practicable without entering the tank.

B. A vapor recovery system shall be connected to the vapor space under the landed tank roof and the vapor space vented to the tank roof landing vapor combustor (EPN VCU-4 or PORTVC). The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when the vapor space is directed to the control device. The vapor space shall be vented to the control device during the period from the first stoppage of liquid withdrawal after the roof is landed until the VOC concentration in the tank per part E of this condition has been verified or the tank has been filled so that the landed roof is floating on the liquid. The vapor recovery system collection rate shall always be greater than 100 cubic feet per minute when the tank is idle and two times the fill rate when the tank is being refilled.

C. The tank roof shall be landed on its lowest legs unless tank entry is planned. The time the roof is landed shall be minimized unless the tank has been completely drained and degassed.

D. If the tank is not degassed per part E of this condition, the date and time the roof is again floating on liquid shall be recorded and parts E through G of this condition do not apply.

E. Tanks shall be degassed as follows:

(1) If tank entry is planned or the tank is to be removed from service for an extended period and the tank had not been entered within the last 24 months, the permit holder shall open at least one entry into the tank to perform a visual inspection of the tank floor and sump to confirm that there is no standing liquid present and the drain dry tank is operating as designed. This inspection shall be performed during controlled degassing, if applicable. If any standing liquid is noted, it must be removed prior to uncontrolled tank degassing.

(2) The gas or vapor removed from the vapor space under the floating roof must be routed to a control device through a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device.

(3) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.

(4) A volume of purge gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system.

(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.

(6) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than 0.15 psia.

F. The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design.

G. The tank may be opened without restriction and ventilated without control after all standing liquid has been removed from the tank as verified by visible inspection and the vapor space concentration in the tank has been verified to be less than 10,000 ppmv or 10% of the LEL. The VOC sampling and analysis shall be performed as specified in Special Condition No 33.A or 33.C.

H. During refilling, the vapor space below the tank roof shall be directed to the vapor combustor until the roof is floating on the liquid. The method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the vapor combustor.

I. Two convenience tank roof landings, two MSS tank roof landings, or one convenience tank roof landing and one MSS tank roof landing may occur simultaneously. Only one tank with a landed floating roof can be filled at any time at a rate not to exceed 5,000 bbl/hr until the roof is refloated. **(XX/XX)**

J. The occurrence of each roof landing and the associated emissions shall be recorded, and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:

(1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;

(2) the reason for the tank roof landing;

(3) for the purposes of estimating emissions, the date, time, and other information specified for each of the following events:

a. the roof was initially landed,
b. all liquid was pumped from the tank to the extent practical,
c. start and completion of controlled standing idle emissions, vapor space volume under the floating roof vented to control device and ventilation flow rate to the control device
d. start and completion of controlled degassing, total volumetric flow, results of any tank inspection of the tank for liquid and any corrective actions taken, VOC concentration sampling results,
e. all standing liquid was removed from the tank,
f. VOC concentration sampling results,
g. refilling commenced, liquid filling the tank, and the volume necessary to float the roof; and
h. tank roof off supporting legs, floating on liquid.

(4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events c and g with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.3 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated October 2024 and the permit application.

K. Floating roof landings are limited to three events per tank per rolling 12-month period. Only one of these roof landing events may also include associated planned tank degassing. **(XX/XX)**

**Planned Maintenance, Startup and Shutdown**

29. This permit authorizes the emissions from the facilities authorized by this permit for the planned maintenance, startup, and shutdown (MSS) activities summarized in this condition. **(11/20)**

A. MSS Activity Summary

| Facility | Activity | EPN |
|---|---|---|
| Storage Tanks | Controlled Tank Roof landings (Standing idle and refilling) | MSS-CONT |
| Storage Tanks | Controlled Tank Degassing | MSS-CONT |
| Storage Tanks | Tank opening, uncontrolled venting to atmosphere | MSS-ATM |
| Routine Maintenance Activities (Paragraph B) | Drain | MSS-ATM |
| Routine Maintenance Activities (Paragraph B) | Degas to control | MSS-CONT |
| Routine Maintenance Activities (Paragraph B) | Opening, uncontrolled venting to atmosphere. | MSS-ATM |
| Routine Maintenance Activities (Paragraph B) | Controlled refilling | MSS-CONT |

| Facility | Activity | EPN |
|---|---|---|
| Minor facilities meeting criteria of Special Condition 29.E; pumps, valves, piping, filters, etc. with an isolated volume of less than 85 cubic feet (i.e. 50 lbs of air contaminant) | Isolate, drain, degas to atmosphere, and refill to support planned maintenance | MSS-ATM |
| Air movers and vacuum trucks | Drain liquid from tanks for planned maintenance | MSS-CONT |
| Frac Tanks, temporary tanks and vessels | Temporary Storage | MSS-ATM |
| Equipment resurfacing | MSS Abrasive Blasting | BLAST |
| Loading of abrasive materials into abrasive blasting hopper | MSS Hopper Loading | HOPPER |
| Loading of blast pot used for abrasive blasting | MSS Blast Pot Loading | BLASTLOAD |
| Loading of containers with spent blast materials | MSS Roll-off Box Loading | ROLLOFF |

B. Routine Maintenance Activities

(1) Pump repair/replacement

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

(3) Filter and meter repair/replacement

(4) Compressor repair/replacement

30. This permit authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, portable control devices identified in Special Condition 40 and controlled recovery systems. Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

31. Routine maintenance activities, as identified in Special Condition 29.B may be tracked through the work orders or equivalent. Emissions from activities identified in Special Condition 29.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 Special Condition 29.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.

32. Process units and facilities, with the exception of those identified in Special Conditions 29 and 36 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 or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 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 Special Condition 29.B, the following option may be used in lieu of (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 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 33. 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. If there is not a connection (such as a sample, vent, or drain valve) available from which a representative sample may be obtained, a sample may be taken upon entry into the system after degassing has been completed. The sample shall be taken from inside the vessel so as to minimize any air or dilution from the entry point. 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 (i.e., 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)

(3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable

All instances of venting directly to atmosphere per Special Condition 32.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 Special Condition 29.B

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 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 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

34. This permit authorizes emissions from internal floating roof storage tanks during planned floating roof landings associated with MSS activities. The requirements of Special Condition No. 28 apply to tank roof landings associated with MSS activities. For purposes of this permit tank roof landings associated with MSS are defined as anytime the tank is cleaned and/or degassed.

35. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:

A. Prior to initial use, identify any liquid in the truck. Record the liquid level and document the VOC partial pressure. After each liquid transfer, identify the liquid, the volume transferred, and its VOC partial pressure.

B. If vacuum pumps or blowers are operated when liquid is in or being transferred to the truck, the following requirements apply:

(1) If the VOC partial pressure of the liquid in or being transferred to the truck is greater than 0.50 psi at 95°F, the vacuum/blower exhaust shall be routed to a control device or a controlled recovery system.

(2) Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

(3) A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.

(a) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a “duckbill” or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(b) If the vacuum truck exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and at least every hour during each transfer shall be recorded, measured using an instrument meeting the requirements of Special Condition 33.A or 33.B.

C. Record the volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12-month vacuum truck emissions shall also be determined on a monthly basis.

E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Special Condition 35.A through 35.D do not apply.

36. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.

A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled, sampled, gauged, or when removing material.

B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom.

C. These requirements do not apply to vessels storing less than 450 gallons of liquid that are closed such that the vessel does not vent to atmosphere except when filling, sampling, gauging, or when removing material.

D. Frac tanks and temporary storage vessels shall be designed such that there are no standing losses emitted to the atmosphere. Standing loss emissions from frac tanks or temporary storage are not authorized by this permit.

E. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12-month period. This record must be updated by the last day of the month following. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

F. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psi at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.

37. No visible emissions shall leave the property due to abrasive blasting. **(11/20)**

38. Garnet Sand may be used for abrasive blasting. The permit holder may also use blast media that meet the criteria below: **(11/20)**

A. The media shall not contain asbestos or greater than 1.0 weight percent crystalline silica.

B. The weight fraction of any metal in the blast media with a short-term ESL less than 50 micrograms per cubic meter as identified in the most recently published TCEQ ESL list shall not exceed the ESLmetal/1000.

C. The Safety Data Sheet (SDS) for each media used shall be maintained on site. **(XX/XX)**

D. Blasting media usage and the associated emissions shall be recorded each month and the rolling 12-month total emissions updated.

39. 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.

40. 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 process or to a collection system that is vented through a control device meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS).

(1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

(2) The CAS shall be sampled downstream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(a) It may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(b) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If the VOC concentration on the initial sample downstream of the first carbon canister following a new polishing canister being put in place is greater than 100 ppmv above background, it shall be assumed that breakthrough occurred while that canister functioned as the final polishing canister and a permit deviation shall be recorded.

(3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition 33.A or 33.B.

(4) Breakthrough is defined as the highest measured VOC concentration at or exceeding 100 ppmv above background. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be

switched to the second canister and a fresh canister shall be placed as the new final polishing canister within four hours. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.

(5) Records of CAS monitoring shall include the following:

(a) Sample time and date.

(b) Monitoring results (ppmv).

(c) Canister replacement log.

(6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

B. Internal Combustion Engine.

(1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.

(2) The engine must have been stack tested with butane or propane to confirm the required destruction efficiency within the period specified in part (3) below. VOC shall be measured in accordance with the applicable United States Environmental Protection Agency (EPA) Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance that may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of Special Condition 33.A are also acceptable for this documentation.

(3) The engine shall be operated and monitored as specified below.

(a) If the engine is operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller, documentation for each AFR controller that the manufacturer's or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation. The engine must have been stack tested within the past 12 months in accordance with part (2) of this condition.

(b) The test period may be extended to 24 months if the engine exhaust is sampled once an hour when waste gas is directed to the engine using a detector meeting the requirements of Special Condition 33.A. 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 engine. The concentrations shall be recorded and the MSS activity shall be stopped as soon as possible if the VOC concentration exceeds 100 ppmv above background.

(c) If an oxygen sensor-based AFR controller is not used, the engine exhaust to atmosphere shall be monitored continuously and the VOC concentration recorded at least once every 15 minutes when waste gas is directed to the engine. 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 engine. The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition 33.A. An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible if the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded. The engine must have been stack tested within the past 24 months in accordance with Part B.(2) of this condition.

C. Vapor Combustor

(1) Temporary portable vapor combustors (EPNs: PORTVC and MSS-CONT) shall provide no less than 99.9 percent DRE control of the waste gas directed to it. This may be demonstrated by one of the following: **(XX/XX)**

a. maintaining thermal vapor combustor firebox exit temperature at not less than 1400°F with waste gas flows limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the combustor; or

b. having completed a control efficiency demonstration (stack test) in accordance with the approved test methods in 30 TAC 115.545 (relating to Approved Test Methods) within the past 12 months and maintaining vapor combustor firebox exit temperature at not less than that temperature maintained during the demonstration with waste gas flow limited to that maintained during the demonstration while waste gas is being fed into the combustor.

(2) The vapor combustor exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the combustor. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency.

(3) 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.

(4) The permit holder shall use portable vapor combustors that incorporate good combustion practices, low $NO_X$ technology, good combustor design, and emission factors as follows: **(XX/XX)**

a. $NO_X$ = 0.164 lbs/MMBtu. The permit holder shall confirm this factor by obtaining and retaining a copy of each portable vapor combustor's stack test results with the corresponding MSS event record.

b. CO = 0.078 lbs/MMBtu

c. CO2e = 206.42 lb/MMBtu.

D. Pilot and assist gas combusted shall be propane or sweet natural gas containing no more than 0.2 grains of total sulfur per 100 dry standard cubic feet. The volume of pilot and assist gas shall be monitored and recorded with records being updated on a monthly basis.

41. The following requirements apply to capture systems for temporary portable vapor combustors used to support MSS activities:

A. If used to control pollutants other than particulate conduct a visual, audible, and/or olfactory inspection of the capture system prior to each use and after each month of continuous operation to verify there are no leaking components in the capture system; or

B. The control device shall not have a bypass, or 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) prior to initial use and each month of continuous service, inspect the valves, verifying that the position of the valves and the condition of the car seals 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.

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.

42. 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.

| **Authorization** | **Source or Activity** |
|---|---|
| PBR No. 161880 | 30 TAC 106.433 Surface Coating |

**Greenhouse Gas Emissions**

43. Monitoring, quality assurance/quality control requirements, emission calculation methodologies, recordkeeping, and reporting requirements related to GHG emissions shall adhere to the applicable requirements in 40 CFR Part 98 and this permit. **(GHG PSD) (0X/25)**

    A. Where a methodology of 40 CFR Part 98 is referenced in this permit, such reference method shall be modified as follows:

    B. References to annual measurements shall be construed as rolling 12-month totals if the relevant parameter is measured on a monthly or more frequent basis.

    C. References to annual measurements that are not measured at a frequency greater than one month (e.g., quarterly or semiannual) shall be construed as the average of the most recent measurements based on a rolling 12-month period (e.g., average of 4 quarterly or 2 semiannual measurements).

44. Permit holders must keep records sufficient to demonstrate compliance with 30 Texas Administrative Code § 116.164. Records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction, a physical change or a change in method of operation does not require authorization under 30 TAC §116.164(a). **(GHG PSD) (0X/25)**

Dated: _Draft

## Emission Sources - Maximum Allowable Emission Rates

Permit Number 122362

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) |
| T-101 | Tank T-101 | VOC | 8.85 | 3.14 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-102 | Tank T-102 | VOC | 8.85 | 3.14 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-103 | Tank T-103 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-104 | Tank T-104 | VOC | 8.85 | 3.14 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-105 | Tank T-105 | VOC | 8.85 | 3.14 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-106 | Tank T-106 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-107 | Tank T-107 | VOC | 8.85 | 3.14 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-108 | Tank T-108 | VOC | 8.85 | 3.14 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-109 | Tank T-109 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-110 | Tank T-110 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-111 | Tank T-111 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-112 | Tank T-112 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| T-113 | Tank T-113 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-114 | Tank T-114 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-115 | Tank T-115 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-116 | Tank T-116 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-117 | Tank T-117 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-118 | Tank T-118 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-119 | Tank T-119 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-120 | Tank T-120 | VOC | 8.85 | 4.29 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-121 | Tank T-121 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-122 | Tank T-122 | VOC | 9.66 | 3.85 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-123 | Tank T-123 | VOC | 9.66 | 3.85 |
| | | $H_2S$ | 0.05 | 0.02 |
| T-124 | Tank T-124 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-125 | Tank T-125 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-126 | Tank T-126 | VOC | 12.45 | 2.61 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| | | $H_2S$ | 0.07 | 0.01 |
| T-127 | Tank T-127 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-128 | Tank T-128 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-129 | Tank T-129 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-130 | Tank T-130 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-131 | Tank T-131 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-132 | Tank T-132 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-133 | Tank T-133 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-134 | Tank T-134 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-135 | Tank T-135 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-136 | Tank T-136 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-137 | Tank T-137 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-138 | Tank T-138 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-139 | Tank T-139 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| T-140 | Tank T-140 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-141 | Tank T-141 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-142 | Tank T-142 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-143 | Tank T-143 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-144 | Tank T-144 | VOC | 8.28 | 3.67 |
| | | $H_2S$ | 0.04 | 0.02 |
| T-201 | Tank T-201 | VOC | 2.03 | 0.54 |
| | | $H_2S$ | 0.01 | <0.01 |
| T-202 | Tank T-202 | VOC | 2.03 | 0.54 |
| | | $H_2S$ | 0.01 | <0.01 |
| RT-1 | Emergency Relief Tank 1 | VOC | 11.34 | 0.31 |
| | | $H_2S$ | 0.06 | <0.01 |
| RT-2 | Emergency Relief Tank 2 | VOC | 11.34 | 0.31 |
| | | $H_2S$ | 0.06 | <0.01 |
| TANKCAP | Storage Tank Emission Cap | VOC | - | 176.78 |
| | | $H_2S$ | - | 0.90 |
| BT-910 | Bunker Oil Storage Tank BT-910 | VOC | 3.08 | 0.42 |
| BT-911 | Bunker Oil Storage Tank BT-911 | VOC | 3.08 | 0.42 |
| BT-912 | Bunker Oil Storage Tank BT-912 | VOC | 6.21 | 0.77 |
| TANKCAP2 | Storage Tank Emission Cap 2 | VOC | - | 1.61 |
| DOCK-2 | Loading Dock No. 2 - Loading Fugitives | VOC | 11.87 | - |
| | | $H_2S$ | 0.01 | - |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| DOCK-4 | Loading Dock No. 4 - Loading Fugitives | VOC | 11.87 | - |
| | | $H_2S$ | 0.01 | - |
| DOCK-5 | Loading Dock No. 5 - Loading Fugitive | VOC | 11.87 | - |
| | | $H_2S$ | 0.01 | - |
| DOCK-8B | Loading Dock No. 8B - Loading Fugitives | VOC | 11.87 | - |
| | | $H_2S$ | 0.01 | - |
| DOCK-9 | Loading Dock No. 9 - Loading Fugitives | VOC | 11.87 | - |
| | | $H_2S$ | 0.01 | - |
| DOCK-2LO | Loading Dock No. 2 - Low VP Loading | VOC | 3.88 | - |
| DOCK-3LO | Loading Dock No. 3 - Low VP Loading | VOC | 3.88 | - |
| DOCK-4LO | Loading Dock No. 4 - Low VP Loading | VOC | 3.88 | - |
| DOCK-5LO | Loading Dock No. 5 - Low VP Loading | VOC | 3.88 | - |
| DOCK-6LO | Loading Dock No. 6 - Low VP Loading | VOC | 3.88 | - |
| DOCK-7LO | Loading Dock No. 7 - Low VP Loading | VOC | 3.88 | - |
| DOCK-8ALO | Loading Dock No. 8A - Low VP Loading | VOC | 3.88 | - |
| DOCK-8BLO | Loading Dock No. 8B - Low VP Loading | VOC | 3.88 | - |
| DOCK-9LO | Loading Dock No. 9 - Low VP Loading | VOC | 3.88 | - |
| DOCK CAP | Dock Emissions Cap | VOC | - | 47.45 |
| | | $H_2S$ | - | 0.05 |
| VCU-1 | Collected and Controlled Marine Loading + Pilot | VOC | 5.06 | - |
| | | $NO_x$ | 10.16 | - |
| | | CO | 2.56 | - |
| | | PM | 0.76 | - |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| | | $PM_{10}$ | 0.76 | - |
| | | $PM_{2.5}$ | 0.76 | - |
| | | $SO_2$ | 7.93 | - |
| | | $H_2S$ | <0.01 | - |
| VCU-2 | Collected and Controlled Marine Loading + Pilot | VOC | 5.06 | - |
| | | $NO_x$ | 10.16 | - |
| | | CO | 2.56 | - |
| | | PM | 0.76 | - |
| | | $PM_{10}$ | 0.76 | - |
| | | $PM_{2.5}$ | 0.76 | - |
| | | $SO_2$ | 7.93 | - |
| | | $H_2S$ | <0.01 | - |
| VCU-3 | Collected and Controlled Marine Loading + Pilot | VOC | 5.06 | - |
| | | $NO_x$ | 10.16 | - |
| | | CO | 2.56 | - |
| | | PM | 0.76 | - |
| | | $PM_{10}$ | 0.76 | - |
| | | $PM_{2.5}$ | 0.76 | - |
| | | $SO_2$ | 7.93 | - |
| | | $H_2S$ | <0.01 | - |
| VCU-5 | Collected and Controlled Marine Loading + Pilot | VOC | 5.06 | - |
| | | $NO_x$ | 10.16 | - |
| | | CO | 2.56 | - |
| | | PM | 0.76 | - |
| | | $PM_{10}$ | 0.76 | - |
| | | $PM_{2.5}$ | 0.76 | - |
| | | $SO_2$ | 7.93 | - |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| | | $H_2S$ | <0.01 | - |
| VCU-6 | Collected and Controlled Marine Loading + Pilot | VOC | 5.06 | - |
| | | $NO_X$ | 10.16 | - |
| | | CO | 2.56 | - |
| | | PM | 0.76 | - |
| | | $PM_{10}$ | 0.76 | - |
| | | $PM_{2.5}$ | 0.76 | - |
| | | $SO_2$ | 7.93 | - |
| | | $H_2S$ | <0.01 | - |
| VCU-7 | Collected and Controlled Marine Loading + Pilot | VOC | 5.06 | - |
| | | $NO_x$ | 10.16 | - |
| | | CO | 2.56 | - |
| | | PM | 0.76 | - |
| | | $PM_{10}$ | 0.76 | - |
| | | $PM_{2.5}$ | 0.76 | - |
| | | $SO_2$ | 7.93 | - |
| | | $H_2S$ | <0.01 | - |
| VCU-8 | Collected and Controlled Marine Loading + Pilot | VOC | 5.06 | - |
| | | $NO_X$ | 10.16 | - |
| | | CO | 2.56 | - |
| | | PM | 0.76 | - |
| | | $PM_{10}$ | 0.76 | - |
| | | $PM_{2.5}$ | 0.76 | - |
| | | $SO_2$ | 7.93 | - |
| | | $H_2S$ | <0.01 | - |
| VCUCAP | Collected and Controlled Marine | VOC | - | 47.07 |
| | | $NO_x$ | - | 47.78 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| | Loading + Pilot Annual Cap | CO | - | 10.43 |
| | | PM | - | 7.02 |
| | | $PM_{10}$ | - | 7.02 |
| | | $PM_{2.5}$ | - | 7.02 |
| | | $SO_2$ | - | 83.29 |
| | | $H_2S$ | - | 0.04 |
| TRUCKLOAD | Uncollected Tank Truck Loading | VOC | 2.91 | 0.04 |
| | | $H_2S$ | 0.01 | <0.01 |
| VCU-4 | Controlled Truck Loading / Routine Tank Floating Roof Landing Emissions + Pilot | VOC | 3.53 | 0.15 |
| | | $NO_x$ | 3.24 | 1.13 |
| | | CO | 2.17 | 0.78 |
| | | PM | 0.24 | 0.08 |
| | | $PM_{10}$ | 0.24 | 0.08 |
| | | $PM_{2.5}$ | 0.24 | 0.08 |
| | | $SO_2$ | 6.95 | 0.51 |
| | | $H_2S$ | 0.01 | <0.01 |
| PORTVC | Portable VCU for Controlled Roof Landings, Degassings + Pilot | VOC | 4.20 | 1.50 |
| | | $NO_x$ | 2.22 | 4.94 |
| | | CO | 1.48 | 2.37 |
| | | PM | 0.16 | 0.23 |
| | | $PM_{10}$ | 0.16 | 0.23 |
| | | $PM_{2.5}$ | 0.16 | 0.23 |
| | | $SO_2$ | 4.12 | 1.77 |
| | | $H_2S$ | <0.01 | <0.01 |
| FUG | Equipment Fugitives (5) | VOC | 3.46 | 13.47 |
| | | $H_2S$ | 0.01 | 0.05 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| MSS-CONT | Equipment MSS Vapors Vented (FIN: EQDEGAS) | VOC | 0.52 | <0.01 |
| | | $NO_x$ | 1.72 | <0.01 |
| | | CO | 0.82 | <0.01 |
| | | PM | 0.08 | <0.01 |
| | | $PM_{10}$ | 0.08 | <0.01 |
| | | $PM_{2.5}$ | 0.08 | <0.01 |
| | | $SO_2$ | 0.82 | <0.01 |
| | | $H_2S$ | <0.01 | <0.01 |
| MSS-CONT | Equipment MSS Refilling (FIN: EQREFILL) | VOC | 0.31 | <0.01 |
| | | $NO_x$ | 1.03 | <0.01 |
| | | CO | 0.49 | <0.01 |
| | | PM | 0.05 | <0.01 |
| | | $PM_{10}$ | 0.05 | <0.01 |
| | | $PM_{2.5}$ | 0.05 | <0.01 |
| | | $SO_2$ | 0.49 | <0.01 |
| | | $H_2S$ | <0.01 | <0.01 |
| MSS-CONT | Air Mover and Vacuum Truck MSS (FIN: AIRVACMV) | VOC | 0.17 | 0.01 |
| | | $NO_x$ | 0.55 | 0.02 |
| | | CO | 0.26 | 0.01 |
| | | PM | 0.02 | <0.01 |
| | | $PM_{10}$ | 0.02 | <0.01 |
| | | $PM_{2.5}$ | 0.02 | <0.01 |
| | | $SO_2$ | 0.26 | 0.01 |
| | | $H_2S$ | <0.01 | <0.01 |
| MSS-CONT | Frac Tank Emissions (FIN: FRACTKS) | VOC | 0.20 | 0.03 |
| | | $NO_x$ | 0.66 | 0.10 |
| | | CO | 0.32 | 0.05 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| | | PM | 0.03 | <0.01 |
| | | $PM_{10}$ | 0.03 | <0.01 |
| | | $PM_{2.5}$ | 0.03 | <0.01 |
| | | $SO_2$ | 0.32 | 0.06 |
| | | $H_2S$ | <0.01 | <0.01 |
| MSS-CONT | Pilot Emissions (FIN: MSS-CONT) | VOC | <0.01 | 0.01 |
| | | $NO_x$ | 0.04 | 0.17 |
| | | CO | 0.02 | 0.10 |
| | | PM | <0.01 | 0.01 |
| | | $PM_{10}$ | <0.01 | 0.01 |
| | | $PM_{2.5}$ | <0.01 | 0.01 |
| | | $SO_2$ | <0.01 | <0.01 |
| MSS-CONT | Controlled MSS Cap | VOC | - | 0.05 |
| | | $NO_x$ | - | 0.30 |
| | | CO | - | 0.16 |
| | | PM | - | 0.02 |
| | | $PM_{10}$ | - | 0.02 |
| | | $PM_{2.5}$ | - | 0.02 |
| | | $SO_2$ | - | 0.07 |
| | | $H_2S$ | - | <0.01 |
| MSS-ATM | Equipment MSS Vapors Vented (FIN: EQVENT) | VOC | 102.11 | 1.10 |
| | | $H_2S$ | 0.09 | <0.01 |
| MSS-ATM | Equipment Draining (FIN: EQDRAIN) | VOC | 20.12 | 0.15 |
| | | $H_2S$ | 0.02 | <0.01 |
| MSS-ATM | Equipment Vapor Space Emissions to Atmosphere Post Control (FIN: EQDGSATM) | VOC | 8.79 | 0.03 |
| | | $H_2S$ | 0.01 | <0.01 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|---|---|---|---|---|
| | | | lbs/hour | TPY (4) |
| MSS-ATM | Equipment MSS Refilling (FIN: EQREFATM) | VOC | 61.27 | 0.66 |
| | | $H_2S$ | 0.05 | <0.01 |
| MSS-ATM | Uncontrolled Venting from Storage Tank Degassing (FIN: Tanks) | VOC | 210.43 | 5.14 |
| | | $H_2S$ | 0.24 | 0.01 |
| MSS-ATM | Miscellaneous Inherently Low Emitting Maintenance Activities (FIN: Misc) | VOC | 21.36 | 0.21 |
| | | $H_2S$ | 0.02 | <0.01 |
| MSS-ATM | Uncontrolled MSS Emission Cap | VOC | 424.08 | 7.29 |
| | | $H_2S$ | 0.42 | 0.01 |
| BLAST | MSS Abrasive Blasting | PM | 4.29 | 4.86 |
| | | $PM_{10}$ | 0.51 | 0.58 |
| | | $PM_{2.5}$ | 0.08 | 0.09 |
| HOPPER | MSS Hopper Loading | PM | 0.14 | 0.01 |
| | | $PM_{10}$ | 0.08 | 0.01 |
| | | $PM_{2.5}$ | 0.01 | 0.01 |
| BLASTLOAD | MSS Blast Pot Loading | PM | 0.09 | 0.01 |
| | | $PM_{10}$ | 0.03 | 0.01 |
| | | $PM_{2.5}$ | 0.01 | 0.01 |
| ROLLOFF | MSS Roll-off Box Loading | PM | 0.09 | 0.01 |
| | | $PM_{10}$ | 0.03 | 0.01 |
| | | $PM_{2.5}$ | 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
$H_2S$ - hydrogen sulfide

Emission Sources - Maximum Allowable Emission Rates

(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.

Date: Draft

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX209

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized 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 authorized by this permit.

Air Contaminants Data

| **Emission Point No. (1)** | **Source Name (2)** | **Air Contaminant Name (3)** | **Emission Rates** |
|---|---|---|---|
| | | | **TPY (4)** |
| VCU-1 | Collected and Controlled Marine Loading + Pilot | $CO_2$ (5) | 45,036.77 |
| | | $CH_4$ (5) | 1.92 |
| | | $N_2O$ (5) | 0.38 |
| | | $CO_2e$ | 45,192.51 |
| VCU-2 | Collected and Controlled Marine Loading + Pilot | $CO_2$ (5) | 45,036.77 |
| | | $CH_4$ (5) | 1.92 |
| | | $N_2O$ (5) | 0.38 |
| | | $CO_2e$ | 45,192.51 |
| VCU-3 | Collected and Controlled Marine Loading + Pilot | $CO_2$ (5) | 45,036.77 |
| | | $CH_4$ (5) | 1.92 |
| | | $N_2O$ (5) | 0.38 |
| | | $CO_2e$ | 45,192.51 |
| VCU-5 | Collected and Controlled Marine Loading + Pilot | $CO_2$ (5) | 45,036.77 |
| | | $CH_4$ (5) | 1.92 |
| | | $N_2O$ (5) | 0.38 |
| | | $CO_2e$ | 45,192.51 |
| VCU-6 | Collected and Controlled Marine Loading + Pilot | $CO_2$ (5) | 45,036.77 |
| | | $CH_4$ (5) | 1.92 |
| | | $N_2O$ (5) | 0.38 |
| | | $CO_2e$ | 45,192.51 |
| VCU-7 | Collected and Controlled Marine Loading + Pilot | $CO_2$ (5) | 45,036.77 |
| | | $CH_4$ (5) | 1.92 |
| | | $N_2O$ (5) | 0.38 |
| | | $CO_2e$ | 45,192.51 |
| VCU-8 | Collected and Controlled Marine Loading + Pilot | $CO_2$ (5) | 45,036.77 |
| | | $CH_4$ (5) | 1.92 |
| | | $N_2O$ (5) | 0.38 |
| | | $CO_2e$ | 45,192.51 |
| VCUCAP | Collected and Controlled Marine | $CO_2$ (5) | 150,587.10 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates |
|---|---|---|---|
| | | | TPY (4) |
| | Loading + Pilot Annual Emissions Cap | $CH_4$ (5) | 6.17 |
| | | $N_2O$ (5) | 1.23 |
| | | $CO_2e$ | 151,086.17 |
| VCU-4 | Controlled Truck Loading / Routine Tank Floating Roof Landing Emissions + Pilot | $CO_2$ (5) | 1,773.41 |
| | | $CH_4$ (5) | 0.54 |
| | | $N_2O$ (5) | 0.01 |
| | | $CO_2e$ | 1,792.08 |
| PORTVC | Portable VCU for Controlled Roof Landings & Degassings + Pilot | $CO_2$ (5) | 4,947.62 |
| | | $CH_4$ (5) | 0.20 |
| | | $N_2O$ (5) | 0.04 |
| | | $CO_2e$ | 4,963.85 |
| FUG | Equipment Fugitives (6) | $CH_4$ (5) | 0.42 |
| | | $CO_2e$ | 11.89 |
| MSS-CONT | Equipment MSS Vapors Vented (FIN: EQDEGAS) | $CO_2$ (5) | 4.06 |
| | | $CH_4$ (5) | <0.01 |
| | | $N_2O$ (5) | <0.01 |
| | | $CO_2e$ | 4.07 |
| MSS-CONT | Equipment MSS Refilling (FIN: EQREFILL) | $CO_2$ (5) | 2.44 |
| | | $CH_4$ (5) | <0.01 |
| | | $N_2O$ (5) | <0.01 |
| | | $CO_2e$ | 2.44 |
| MSS-CONT | Air Mover and Vacuum Truck MSS (FIN: AIRVACMV) | $CO_2$ (5) | 20.60 |
| | | $CH_4$ (5) | <0.01 |
| | | $N_2O$ (5) | <0.01 |
| | | $CO_2e$ | 20.68 |
| MSS-CONT | Frac Tank Emissions (FIN: FRACTKS) | $CO_2$ (5) | 94.01 |
| | | $CH_4$ (5) | <0.01 |
| | | $N_2O$ (5) | <0.01 |
| | | $CO_2e$ | 94.34 |
| MSS-CONT | Pilot Emissions (FIN: MSS-CONT) | $CO_2$ (5) | 165.76 |
| | | $CH_4$ (5) | 0.01 |
| | | $N_2O$ (5) | <0.01 |
| | | $CO_2e$ | 166.40 |
| MSS-CONT | Controlled MSS Cap | $CO_2$ (5) | 286.88 |
| | | $CH_4$ (5) | 0.01 |

Emission Sources - Maximum Allowable Emission Rates

| Emission Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates |
|---|---|---|---|
| | | | TPY (4) |
| | | $N_2O$ (5) | <0.01 |
| | | $CO_2e$ | 287.94 |

(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) $CO_2$ - carbon dioxide
$N_2O$ - nitrous oxide
$CH_4$ - methane
$CO_2e$ - carbon dioxide equivalents based on the following Global Warming Potentials (1/2025):
$CO_2$ (1), $N_2O$ (265), $CH_4$ (28), $SF_6$ (23,500), HFC (various), PFC (various)
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. These rates include emissions from maintenance, startup, and shutdown.
(5) Emission rate is given for informational purposes only and does not constitute enforceable limit.
(6) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: Draft

# Preliminary Determination Summary

Enbridge Ingleside, LLC
Permit Numbers 122362, PSDTX1430M2, and GHGPSDTX209

## I. Applicant

Enbridge Ingleside Oil Terminal LLC
915 N Eldridge Pkwy Ste 1100
Houston, TX 77079-2703

## II. Project Location

Enbridge Ingleside Oil Terminal
1450 Lexington Blvd
San Patricio County
Ingleside, Texas 78362

## III. Project Description

Enbridge Ingleside, LLC (Enbridge) owns and operates the Enbridge Ingleside Oil Terminal (EIOT or “the terminal”) which is submitting an amendment for as-built corrections to sources included in the permit amendment issued on December 6, 2019. In addition, the amendment will increase throughput, operational flexibility, consolidate permit by rule (PBR) No. 159913 and consolidate pollution control project (PCP) Standard Permit No.162551.

Maintenance, startup, and shutdown (MSS) activities are authorized by this permit.

With this NSR permit amendment application, Enbridge proposes the following:

- Revise nitrogen oxides ($NO_X$) and carbon monoxide (CO) emission factors for marine vapor combustor units MVCUs based on stack testing results from October 2020;
- Correct heat input to MVCUs from inland barge loading in marine loading calculations;
- Add emissions from use of supplemental fuel for tank maintenance, startup, and shutdown (MSS) activities, as applicable;
- Incorporate as-built equipment specifications on storage tanks:
    - Update floating roof deck fitting component counts and controls;
    - Update the diameter on the 202,000 barrel (bbl) IFR tank (EPN: T-126) from 210 ft to 140 ft;
    - Update the number of columns on the 467,000 bbl and 202,000 bbl IFR tanks;
- Update storage tank emission calculations to use the solar absorptance factor for “average” instead of “new” paint condition to reflect the emissions from the tank as the paint on the tank becomes weathered. The marine loading and MSS emission calculations will also be update, as they are affected because it uses the liquid temperatures calculated by the storage tank emission estimates;
- Update storage tank emission calculations to be based off the liquid surface and bulk storage temperatures, update the Reid Vapor Pressure (RVP) of condensate from 13.5 to 12.5 and crude from 10 to 9.5. These updates represent a morre realistic true vapor pressures (TVPs) for annual storage tank emissions;
- Rename EPNs: EMERTK1 and EMERTK2 as RT-1 and RT-2;
- Add equipment leak fugitive components (relief valves) and update component counts based on actual field counts;
- Update representations for equipment leak fugitive components in natural gas (< 10% VOC) service;
- Increase the $H_2S$ content in crude and condensate to 50 ppmw in liquid only for storage tanks and equipment leak fugitives to accommodate a broader variety of incoming crude oils;

- Update LHV to HHV for the combustion emission calculations, which results in emission increases from routine and MSS combustion sources;
- Increase storage tank throughputs to allow for tank-to-tank transfers to manage crude inventories during demand fluctuations and an variety of incoming crudes;
- Increase the short-term and annual marine loading rates to load larger vessels more efficiently,;
- Authorize crude and condensate loading at Docks 7 (inland barges only), 8 and 9 (EPNs: DOCK-7, DOCK-8B, and DOCK-9, respectively);
- Incorporate by consolidation PBR Registration No. 159913 (latest revision approved on May 5, 2023);
- Update the duration of product change roof landings from 6 hours to 12 hours to be consistent with as-operated event durations;
- Decrease the number of annual events of vessel and piping clearing from 44 to 5 based on operational experience;
- Correct the molar volume in MSS calculations to be based on 68°F instead of 60°F;
- Increase the H2S content during tank refilling after roof landings from 10 ppmw to 50 ppmw;
- Decrease the allowable vapor space VOC concentration from 10,000 ppm by volume (ppmv) to 5,000 ppmv for tanks T-123 and T-124 prior to disconnecting from the control device during tank degassing operations;
- Incorporate by consolidation NRSP for PCP Registration No. 162551 for MVCU EPN: VCU-8;
- Corrections to formulas in previously submitted emission calculations, including updated uncontrolled venting from crude and condensate tanks during tank degassing events. The methodology has been updated to be consistent with the TCEQ's MSS Guidance; and
- Incorporate by reference PBR Registration No. 161880 for surface coating operations.

## IV. Emissions

| Air Contaminant | Proposed Allowable Emission Rates (tpy) |
|---|---|
| VOC | 295.41 |
| $NO_x$ | 54.14 |
| $SO_2$ | 85.62 |
| CO | 13.73 |
| $PM/PM_{10}/PM_{2.5}$ | 12.23/7.95/7.46 |
| $H_2S$ | 1.09 |
| $CO_2$ | 157,582.08 |
| $CH_4$ | 7.34 |
| $N_2O$ | 1.29 |
| $CO_2$ Equivalents ($CO_2e$) | 158,128.96 |

$CO_2e$ - carbon dioxide equivalents based on global warming potentials of $CH_4$ = 28, $N_2O$ = 265, $SF_6$=23,500.

## 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[a]** | **PSD Triggered Y/N** |
|---|---|---|---|---|
| VOC | 295.41 | 25 for NA<br>40 for PSD | N | Yes |
| $NO_x$ | 54.14 | 25 for NA<br>40 for PSD | N | Yes |
| $SO_2$ | 85.62 | 40 | N | Yes |
| CO | 13.73 | 100 | N | No |
| PM | 7.95 | 25 | N | No |
| $PM_{10}$ | 7.46 | 15 | N | No |
| $PM_{2.5}$ | 7.46 | 10 | N | No |
| $H_2S$ | 1.09 | 10 | N | No |

[a] As stated above, the site is located in Ingleside, San Patricio County, Texas which is currently designated attainment for all criteria pollutants; therefore, NNSR does not apply to the proposed project.

The proposed project triggers PSD review for non-GHG NSR regulated pollutants. As shown in the table below, because the project increase is more than 75,000 tpy of CO2e, PSD review is triggered for GHG emissions.

| Pollutant | Project Emissions (tpy) | Major Source or Major Mod Trigger Level (tpy) | PSD Triggered Y/N |
|---|---|---|---|
| CO2e | 158,128.96 | 75,000 | Y |

**For PSD and NNSR**

The site is an existing major source. But because the site has had many as built changes from its initial permit, this site will be reviewed as a greenfield site with no existing emissions.

With this amendment application, Enbridge was representing another as built changes. After a meeting with TCEQ, Enbridge has agreed that the project emission increase will be compared to a baseline emission of zero to simplify the PSD review and provide clarity and confidence to the public that the proposed operation will be protective of the environment.

The project emission increases are summarized in the table below. As a named source, the "step 1" project emission increase for each pollutant is compared to the PSD named source new major source threshold of 100 tpy for each pollutant. As shown in the table, VOC emissions exceed the 100-tpy new major source threshold, and therefore PSD applies to this pollutant. Note that contemporaneous netting does not apply to greenfield sites. Since at least one pollutant exceeds the new major source threshold, the remaining pollutants that did not exceed the new major source threshold are compared to their respective significant emission rate threshold. As shown in the table, $SO_2$ and $NO_X$ each exceed their respective significant emission rates of 40 tpy and 40 tpy, respectively, and therefore are also subject to PSD review.

Due to this conservative PSD evaluation, which treats historical actual emissions as zero, PSD review is applicable to VOC, $NO_X$, and $SO_2$.

As a PSD "anyway" source, meaning PSD is triggered for a non-GHG pollutant, GHGs as CO2e must be evaluated for PSD applicability. As shown in the table, the GHG annual emission rate as CO2e is greater than its respective PSD significant emission rate threshold of 75,000 tpy. Therefore, PSD review is also triggered for GHGs.

| Pollutant | "Step 1" Project Emissions Increase (tpy) | New Major Source Threshold (tpy) | New Major Source Threshold Exceeded? | Significant Emission Rate (tpy) | Significant Emission Rate Exceeded? | PSD Triggered? |
|---|---|---|---|---|---|---|
| CO | 13.73 | 100 | No | 100[a] | No | **No** |
| NOx | 54.14 | 100 | No | 40[a] | Yes[b] | **Yes** |
| PM | 12.23 | 100 | No | 25[a] | No | **No** |
| $PM_{10}$ | 7.95 | 100 | No | 15[a] | No | **No** |
| $PM_{2.5}$ | 7.46 | 100 | No | 10[a] | No | **No** |
| $SO_2$ | 85.62 | 100 | No | 40 | Yes[b] | **Yes** |
| VOC | 295.41 | 100 | Yes | 40[a] | N/A[a] | **Yes** |
| $H_2S$ | 1.09 | 100 | No | 7 | No | **No** |
| GHGs, $CO_2e$ | 158,128.96[c] | N/A | N/A | 75,000 | Yes | **Yes** |

[a] Since the "step 1" project emission increase exceeds the PSD new major threshold of 100 tpy for a named source, the project emission increase is not compared to the significant emission rate since PSD is triggered for the pollutant due to exceeding the new major source threshold and therefore it is not compared to it respective PSD significant emission rate threshold.
[b] Contemporaneous netting does not apply to new greenfield sites, and the rules do not allow contemporaneous netting at existing minor sources.
[c] $CO_2e$ emissions are based on the following global warming potentials taken from Table A-1 of 40 CFR 98 effective January 1, 2025 and later (89 FR 31894, April 25, 2024): 1 for $CO_2$, 28 for $CH_4$, 265 for $N_2O$, and 23,500 for $SF_6$.

## VI. Control Technology Review

A control technology review was conducted for marine loading, vapor combustors, storage tanks, tank truck loading, fugitive emissions, storage tank MSS and equipment MSS specifically as it relates to the terminal. The applicant submitted RACT/BACT/LAER Clearinghouse (RBLC) database search summaries for the pollutants that triggered PSD, which are VOC, $NO_X$, $SO_2$, and

GHGs as CO2e, and these RBLC search summary results are included in the summary below. The applicant fulfilled the requirements of EPA's five-step "top-down" BACT process for the evaluation of BACT for criteria pollutants and GHGs pollutants. The proposed control detailed below was determined to meet EPA's top-down Best Available Control Technology (BACT) guidelines:

- VOC emissions
  - Controlled and uncontrolled marine loading of ship and barges
  - Combustion occurring at the vapor combustors
  - Storage tanks
  - Tank Truck loading
  - Fugitives emissions and
  - Storage tank MSS and equipment MSS
- $NO_X$ and $SO_2$ emissions
  - Combustion occurring at vapor combustors
- GHG emissions
  - Fugitive emissions
  - Combustion occurring at vapor combustors

**<u>BACT Evaluation</u>**

BACT for the proposed project is summarized in the table below for each emitting source and the pollutants that triggered PSD review, which are VOC, $NO_X$, $SO_2$, and GHGs as $CO_2e$. State minor BACT was also evaluated for the other pollutants that did not trigger PSD review and is also summarized in the table below. The applicant submitted RACT/BACT/LAER Clearinghouse (RBLC) database search summaries for the pollutants that triggered PSD review (VOC, $NO_X$, $SO_2$, and GHGs as $CO_2e$), and these RBLC search summary results are included in the table below. The EPA top-down BACT approach for PSD review was the followed. The applicant fulfilled these requirements.

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| Loading Docks | **High VP (≥ 0.5 psia) Product** Loading: DOCK-2, DOCK-4, DOCK-5, DOCK-8B, DOCK-9 **Low VP (< 0.5 psia) Product Loading:** DOCK-2LO, DOCK-3LO, DOCK-4LO, DOCK-5LO, DOCK-6LO, DOCK-7LO, DOCK-8ALO, | VOC | Step 1 - Identify all control options<br><br>Based on a search of the RACT/BACT/LAER Clearinghouse (RBLC), potential control options for "marine" VOCs in the United States from January 1, 2011 through December 22, 2021 include the following:<br><br>1) Submerged or bottom loading for all materials<br>2) Line and connector inspections prior to loading<br>3) Flanged connections<br>4) Vacuum loading of inland barges of at least 1.5-inch water column for materials with a vapor pressure (VP) > 0.5 pounds per square inch absolute (psia)<br>5) Materials with VP > 0.5 psia are routed |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | DOCK-8BLO,<br>DOCK-9LO<br>TANKCAP | | to a marine vapor combustor unit (VCU) with 98-99.9% destruction removal efficiency (DRE)<br>6) Collection efficiency of 100% for inland barges and 99% (or greater) for ships/ocean-going barges for materials with VP > 0.5 psia<br>7) Audio/visual/olfactory (AVO) leak checks every 8 hours<br>8) Annual vapor tightness testing for marine vessels in accordance with 40 CFR §63.565(c) or 40 CFR §61.304(f)<br><br>Step 2 - Eliminate technically infeasible options<br><br>None of the potential control options for marine loading VOCs presented in Step 1 are considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>1) Materials with VP > 0.5 psia are routed to an MVCU with 98-99.9% DRE<br>2) Annual vapor tightness testing for marine vessels in accordance with 40 CFR §63.565(c) or 40 CFR §61.304(f)<br>3) Collection efficiency of 100% for inland barges and 99% (or greater) for ships/ocean-going barges for materials with VP > 0.5 psia<br>4) Vacuum loading of inland barges of at least 1.5-inch water column for materials with a VP > 0.5 psia<br>5) Audio/visual/olfactory (AVO) leak checks every 8 hours<br>6) Submerged or bottom loading for all materials<br>7) Line and connector inspections prior to loading<br>8) Flanged connections<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for marine loading VOCs are eliminated |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | based on an evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>1) Materials with VP > 0.5 psia are routed to an MVCU with 99.9% DRE<br>2) Annual vapor tightness testing for marine vessels in accordance with 40 CFR §63.565(c) or 40 CFR §61.304(f)<br>3) Collection efficiency of 100% for inland barges and 99.9% (or greater) for ships/ocean-going barges for materials with VP > 0.5 psia<br>4) Vacuum loading of inland barges of at least 1.5-inch water column for materials with a VP > 0.5 psia<br>5) Audio/visual/olfactory (AVO) leak checks every 8 hours<br>6) Submerged or bottom loading for all materials<br>7) Line and connector inspections prior to loading<br>8) Flanged connections |
| | | $H_2S$ | Marine loading is controlled using a thermal control device, which will also control $H_2S$. Thermal control will destroy a minimum of 98% of $H_2S$ vapors. |
| Vapor Combustor Units | Permanent Vapor Combustor Units (EPNs: VCU-1, VCU-2, VCU-3, VCU-4, VCU-5, VCU-6, VCU-7, VCU-8)<br>Portable Vapor Combustor (EPN: PORTVC) | $NO_X$ | Step 1 - Identify all control options<br><br>Based on a search of the RBLC, potential control options for “vapor combust” $NO_X$ in the United States from January 1, 2011 through December 22, 2021 include the following:<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>2) Use of sweet natural gas fuel or propane (portable VCU only)<br>3) Good combustor design<br>4) Low $NO_X$ technology (0.06 lb/MMBtu)<br><br>Step 2 - Eliminate technically infeasible options |

| **Source Name** | **EPN** | **Pollutant** | **Best Available Control Technology Description** |
|---|---|---|---|
| | | | None of the potential control options for VCU $NO_X$ presented in Step 1 are considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>2) Low $NO_X$ technology (0.06 lb/MMBtu)<br>3) Good combustor design<br>4) Use of sweet natural gas fuel or propane (portable VCU only)<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for VCU $NO_X$ are eliminated based on an evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>2) Low $NO_X$ equivalent operation (for marine VCU 1, 2, 3, 5,6, 7, 8)<br>a. These marine VCUs are demonstrated through stack testing to be equivalent to low $NO_X$ technology emission factors.<br>b. VCU-4 and PORTVC are used to control vapors from infrequent, short duration, low volume activities, and are optimized for VOC control. Emission factors of 0.10 lb |

| **Source Name** | **EPN** | **Pollutant** | **Best Available Control Technology Description** |
|---|---|---|---|
| | | | $NO_X$/MMBtu (VCU-4) and 0.164 lb $NO_X$/MMBtu (PORTVC) are proposed as BACT.<br>3) Good combustor design<br>4) Use of sweet natural gas fuel or propane (portable VCU only)<br><br>Emission factor is 0.05 lb/MMBtu on an annual basis for VCU-1, 2, 3, 5, 6, 7, 8.<br>Emission factor is 0.10 lb/MMBtu on an annual basis for VCU-4.<br>Emission factor is 0.164 lb/MMBtu on an annual basis for PORTVC. |
| | | VOC | Step 1 - Identify all control options<br><br>Based on a search of the RBLC, potential control options for “vapor combust” VOCs in the United States from January 1, 2011 through December 22, 2021 include the following:<br><br>1) Use of natural gas or propane (portable VCU only) as supplemental fuel<br>2) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>3) No visible emissions<br>4) Maintain a constant pilot flame during all times waste gas could be directed to it<br><br>Step 2 - Eliminate technically infeasible options<br><br>None of the potential control options for VCU VOCs presented in Step 1 are considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | 2) Use of natural gas or propane (portable VCU only) as supplemental fuel<br>3) Maintain a constant pilot flame during all times waste gas could be directed to it<br>4) No visible emissions<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for VCU VOCs are eliminated based on an evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>2) Use of sweet natural gas or propane (portable VCU only) as supplemental fuel<br>3) Maintain a constant pilot flame during all times waste gas could be directed to it<br>4) No visible emissions |
| | | $SO_2$ | Step 1 - Identify all control options<br><br>Based on a search of the RBLC, potential control options for “vapor combust” $SO_2$ in the United States from January 1, 2011 through December 22, 2021 include the following:<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>2) Use of sweet natural gas fuel or propane (portable VCU only) sulfur limit 0.2 GR/DSCF<br>3) Good combustor design<br><br>Step 2 - Eliminate technically infeasible |

| **Source Name** | **EPN** | **Pollutant** | **Best Available Control Technology Description** |
|---|---|---|---|
| | | | options<br><br>None of the potential control options for VCU $SO_2$ presented in Step 1 are considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>2) Good combustor design<br>3) Use of sweet natural gas fuel or propane (portable VCU only)<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for VCU $SO_2$ are eliminated based on an evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>1) Good combustion practices, including maintaining proper air-to-fuel ratio and necessary residence time, temperature, and turbulence<br>2) Good combustor design<br>3) Use of sweet natural gas fuel or propane (portable VCU only) 0.2 grains of total sulfur per 100 dry standard cubic feet<br><br>In addition, Enbridge will limit the amount of $H_2S$ in marine loaded product and tank MSS activities to 10 ppmw in order to minimize the conversion of $H_2S$ to $SO_2$ emissions. |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | CO | Use of sweet natural gas as fuel, good combustion practice to minimize CO |
| | | $PM/PM_{10}/PM_{2.5}$ | Use of sweet natural gas as fuel, good combustion practice to minimize PM, $PM_{10}$, $PM_{2.5}$. |
| | | $H_2S$ | Thermal control will destroy a minimum of 98% of $H_2S$ vapors. |
| | | GHG | Step 1 - Identify all control options<br><br>A search of the RACT/BACT/LAER Clearinghouse (RBLC) was conducted for facilities in the United<br>States of America from January 1, 2011 to December 22, 2021 for emission control afterburners and incinerators emitting CO2e. The RBLC search found two permits with VCUs, one for Lake Charles Chemical Complex GTL Unit in Louisiana, and another for Sunoco Partners Marketing & Terminals Nederland Terminal in Texas. The BACT identified for the Lake Charles facility was 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. Subpart FFFF is applicable to miscellaneous organic chemical manufacturing and is therefore not applicable at the EIOT. BACT for the Nederland Terminal's VCU was not specific to $CO_2e$ and included the following: use of natural gas with a maximum 5 grains of total sulfur per 100 dry standard cubic feet. No visible emissions and maintain a constant pilot flame during all times waste gas could be directed to it. Good combustion practices will be used to reduce $SO_2$ including maintain proper air-to-fuel ratio, necessary residence time, temperature and turbulent.<br><br>EPA GHG permit applications for two sites with similar facilities in Texas were also reviewed for |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | potentially applicable BACT. The applications which were reviewed included a 2013 application for Magellan Terminals Holdings, L.P. Corpus Christi Terminal in Nueces County and a 2012 application for Occidental Chemical Corporation’s Ingleside Chemical Plant in San Patricio County.<br><br>Potential GHG emission control technologies identified from the above sources for VCUs include the following. Because there were limited data available in the RBLC for GHGs from VCUs, Enbridge also reviewed GHG BACT for thermal oxidizers, which are similar to VCUs, but which have an enclosed firebox and piped inlet air, rather than the more open flame zone and louvered inlet air configuration of the VCUs:<br><br>1) Use of natural gas as a low carbon fuel:<br>2) Good combustor design:<br>a. The design achieves good fuel and air mixing with sufficient temperatures to assure complete combustion and to maximize thermal efficiency.<br>3) Good combustion practices:<br>a. Filtration of inlet air to prevent reduced performance caused by dust and debris in the intake air supply;<br>b. Use of refractory materials that provide the highest insulating capacity practicable;<br>c. Proper insulation of equipment and piping to minimize heat loss;<br>d. Instrumentation to monitor the fuel consumption and flue gas temperature;<br>e. Flame patterns are monitored by a thermocouple or infrared monitor;<br>f. Periodic tune-ups consistent with manufacturer recommendations;<br>4) Recovery:<br>a. Waste heat recovery: Use of thermal oxidizers with high firebox temperatures and waste heat recovery from the heater exhaust to preheat the combustion air or produce steam for use at the site, thereby offsetting GHG |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | emissions from other fuel combustion sources;<br>b. Carbon Capture and Sequestration (CCS) of process $CO_2$: capture, compression, transport, and geological storage or use of $CO_2$ rich vent streams rather than combustion; and<br>c. CCS of $CO_2$ from combustion: Capture, compression, transport, and geological storage or use of $CO_2$ in the vapor combustor flue gas exhaust.<br><br>Step 2 - Eliminate technically infeasible options<br><br>Of the above potential GHG emission control technologies, the three (3) recovery options are technically infeasible at the EIOT, as follows:<br><br>1) Waste heat recovery: This option is technically infeasible because steam is not utilized on site and combustion air for vapor combustors is introduced through a louver system rather than through air intake piping that could be pre-heated using a waste gas heat exchanger;<br>2) CCS of process $CO_2$: This option is technically infeasible because there is no process $CO_2$ at the site to capture; and<br>3) CCS of $CO_2$ from combustion: This option's analysis is explained in the following two subsections.<br><br>Per the EPA's PSD and Title V Permitting Guidance for Greenhouse Gases (EPA, March 2011), feasibility is defined as follows:<br><br>"EPA generally considers a technology to be technically feasible if it: (1) has been demonstrated and operated successfully on the same type of source under review, or (2) is available and applicable to the source type under review. If a technology has been operated on the same type of source, it is presumed to be technically feasible. An available technology from |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | Step 1, however, cannot be eliminated as infeasible simply because it has not been used on the same type of source that is under review. If the technology has not been operated successfully on the type of source under review, then questions regarding “availability” and “applicability” to the particular source type under review should be considered in order for the technology to be eliminated as technically infeasible.”<br><br>Demonstrated and Operated on the Same Type of Source<br><br>The first question to answer is if the technology has been demonstrated and operated successfully on the same type of source under review. No examples of CCS for similar vapor combustor facilities were found in the search of the RBLC nor was it selected as BACT in the projects reviewed in the preparation of this application. It was discussed as a potential BACT for similar sources, and is therefore being included for completeness, but was subsequently eliminated in each reviewed application.<br><br>Post-combustion capture is used to capture $CO_2$ from the flue gas, and the concentration of $CO_2$, the pressure of the gas stream, and fuel type (solid or gas) are considered when selecting a capture system. It is a currently available technology and has been demonstrated at a large scale utilizing an aqueous amine solvent at sources of electricity generation10 and also has a mature market in the natural gas processing industry. The EIOT is not a large-scale source of $CO_2$ emissions, is not an electricity generation site, and is not a natural gas processing site. In addition, CCS is not generally considered to be a suggested method of controlling GHG from natural gas fired |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | facilities. For example, the EPA's guidance document does not suggest CCS as a possible control method in the document's only natural gas fired example, Natural Gas Boilers, as written in Appendix F of the document. Further, backpressure resulting from enclosing the VCU flue and routing the exhaust gases to a carbon capture system would alter the combustion design and potentially affect the ability of the VCU to adequately control marine loading emissions. In addition, CCS utilizes amine absorption technology which is designed to operate continuously. Amine absorption-based carbon capture is not designed to start and stop frequently and will not operate efficiently under such conditions. The CCS technology is not feasible for the portable VCUs as these units will be moved around the site frequently.<br><br>Because the EIOT's VCU operations differ significantly from high-$CO_2$ mass and concentration applications and other implementations of this CCS technology, it is uncertain if the permanent VCUs could function as VOC and $H_2S$ emissions control devices in a similar manner as previously demonstrated during their performance tests if the stacks are enclosed and the exhaust sent to a $CO_2$ concentrator prior to transport. Per the EPA's guidance, "CCS may be eliminated from a BACT analysis in Step 2 if it can be shown that there are significant differences pertinent to the successful operation for each of [the] three main components from what has already been applied to a differing source type". The three main components included capture and/or compression, transport, and storage.<br><br>CCS is not technically feasible for the |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | VCUs because:<br>(i) It will impact the VCU's operation and control efficiency;<br>(ii) It does not operate efficiently for emission sources with frequent starts and stops; and<br>(iii) It is not operable with portable sources.<br><br>Availability and Applicability<br><br>Next, the questions of "availability" and "applicability" need to be considered, as CCS cannot be eliminated solely because it has not been used on the same type of source under review.<br><br>A technology is considered to be "available" under the common meaning of available or if it can be obtained through commercial channels. There are three components to CCS: capture and/or compression, transport, and storage. If these three components working together are determined to be technically infeasible, it can be eliminated from BACT in Step 2.<br><br>CCS is generally considered to be "an "available" add-on pollution control technology for facilities emitting $CO_2$ in large amounts and industrial facilities with high-purity $CO_2$ streams", per the EPA's guidance. The VCUs will be emitting $CO_2$ as a product of combustion at a concentration of approximately 5% by volume and not as a high-purity stream; therefore, it is not readily identifiable as being "available" for the capture and/or compression step.<br><br>In order transport the $CO_2$ offsite, a pipeline would need to be built to connect to existing infrastructure, or it would need to be trucked to an existing pipeline. A review of $CO_2$ pipelines in Texas was performed utilizing the The Railroad Commission of Texas' Public |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | GIS Viewer and associated data exports. No $CO_2$ pipelines in San Patricio or the surrounding counties were identified. The nearest identified pipeline was the TCV Pipeline operated by Harvest Midstream Co. in Jackson County. While the specific location where $CO_2$ might be delivered for potential transport to another location was not identified, Jackson County is at least 70 miles from the EIOT.<br><br>If $CO_2$ were to be captured and transported either by truck or pipeline, storage could be achieved via enhanced oil recovery (EOR). The closest identified EOR site is the West Ranch Oil Field in Jackson County which has used $CO_2$ from the NRG Petra Nova coal-fired power plant. While the Petra Nova CCS project has recently been re-started, that system, which is installed on the exhaust of a coal fired utility boiler with an enclosed firebox, is not technically similar to the open firebox/stack design of a vapor combustor. Enclosing a vapor combustor such that the exhaust could be captured and treated for $CO_2$ sequestration would pose operational and safety problems to the VCU. Therefore, capturing and controlling VCU exhaust to remove and sequester $CO_2$ is not a technically feasible option.<br><br>Per the EPA guidance: “a permitting authority may conclude that CCS is not applicable to a particular source, and consequently not technically feasible, even if the type of equipment needed to accomplish the compression, capture, and storage of GHGs are determined to be generally available from commercial vendors” based upon “logistical hurdles”.<br><br>As noted above, CCS can be a viable technology for power plants and natural gas processing facilities. The nearest identified project utilizing this |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | process was the NRG Petra Nova power plant which has transported an average of 3,050 short tons of $CO_2$ per day via pipeline for EOR. In order to so implement CCS, that project utilized U.S. Department of Energy grants, required a joint venture with an oil and gas production company, an additional joint venture with another energy firm, and an independent oil field. It also required the construction of a pipeline. The EIOT is not in the same source category, does not operate its VCUs continuously like power plants and natural gas processing facilities, and does not have an equivalent potential to emit GHGs. In addition, it would face the following logistical hurdles: obtaining contracts for offsite land use including obtaining rights-of-way for a pipeline and disposal EOR facility use; the need for funding including but not limited to applying for and acquiring funding from government subsidies; including the timing of construction of transportation infrastructure in the project timeline; and developing an EOR site or negotiating contracts to work with an existing EOR.<br><br>Given the above analysis including a review of conditions 1 and 2 of the EPA guidance, CCS was eliminated at Step 2 for this source.<br><br>Step 3 - Rank remaining control options<br><br>After eliminating the technically infeasible options, the following technologies remain for both permanent and portable VCUs: the use of a low carbon fuel, good combustor design, and good combustion practices. The following are ranked in order of highest control efficiency to lowest.<br><br>1) GHG emissions result from the conversion of the carbon in the fuel during fuel combustion. Fuels commonly used in industrial processes may include process fuel gas, natural gas, fuel oil, and coal and of these, |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | natural gas has the lowest amount of $CO_2$ emitted per unit of energy output. Natural gas combustion has the potential to emit 51% of the amount of $CO_2$ compared to the emissions of $CO_2$ per MMBtu of coal. The only fuels with lower emission factors are geothermal energy and municipal solid waste, which are not common sources of fuel for VCUs. The site does not have access to a geothermal energy source, and it would be cost-prohibitive to do so and technologically infeasible as a fuel source for the portable VCU; energy produced from municipal solid waste is not available on site. Natural gas is the lowest carbon fuel available for use in the stationary VCUs, with low-carbon propane an acceptable alternative for the portable VCU that cannot always be located near a natural gas supply line.<br>2) Good combustor design and good combustion practices have a range of efficiency improvements which are not directly quantifiable. Design improvements such as the use of modern high efficiency pilots can reduce natural gas consumption by 30%. VCUs require periodic inspection, maintenance, and repairs which help maintain peak effectiveness of the unit.<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>There are no negative environmental, economic, or energy impacts associated with the use of natural gas or propane as a fuel, good combustor design, and good combustion practices.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>1) Use of sweet natural gas or propane (for the portable VCU only) as a low carbon fuel: |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | 2) Good combustor design:<br>a. The design achieves good fuel and air mixing with sufficient temperatures to assure complete combustion and to maximize thermal efficiency.<br>3) Good combustion practices:<br>a. Filtration of inlet air to prevent reduced performance caused by dust and debris in the intake air supply;<br>b. Use of refractory materials that provide the highest insulating capacity practicable;<br>c. Proper insulation of equipment and piping to minimize heat loss;<br>d. Instrumentation to monitor the fuel consumption and flue gas temperature;<br>e. Flame patterns are monitored by a thermocouple or infrared monitor; and<br>f. Periodic tune-ups consistent with manufacturer recommendations. |
| Storage Tanks | EPNs: T-101, T-102, T-103, T-104, T-105, T-106, T-107, T-108, T-109, T-110, T-111, T-112, T-113, T-114, T-115, T-116, T-117, T-118, T-119, T-120, T-121, T-122, T-123, T-124, T-125, T-126, T-127, T-128, T-129, T-130, T-131, T-132, T-133, T-134, T-135, T-136, T-137, T-138, T-139, T-140, T-141, T-142, T- | VOC | Step 1 - Identify all control options<br>Based on a search of the RBLC, potential control options for “tank” VOCs in the United States from January 1, 2011 through December 22, 2021 include the following:<br><br>High VP (≥ 0.5 psia) Products:<br><br>1) IFR with a mechanical shoe primary seal and a rim-mounted secondary seal or primary mechanical shoe seal only<br>2) Tanks painted white or unpainted aluminum<br>3) Utilize submerged fill<br>4) Drain-dry design<br><br>Low VP (< 0.5 psia) Products:<br><br>1) Fixed roof tanks<br>2) Utilize submerged fill<br>3) Tanks painted white<br><br>Step 2 - Eliminate technically infeasible options<br><br>None of the potential control options for storage tank VOCs presented in Step 1 |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | 143, T-144, T-201, T-202, RT-1, RT-2, BT-910, BT-911, BT-912, TANKCAP | | are considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>High VP (≥ 0.5 psia) Products:<br><br>1) IFR with a mechanical shoe primary seal and a rim-mounted secondary seal or primary mechanical shoe seal only<br>2) Tanks painted white or unpainted aluminum<br>3) Utilize submerged fill<br>4) Drain-dry design<br><br>Low VP (< 0.5 psia) Products:<br><br>1) Fixed roof tanks<br>2) Utilize submerged fill<br>3) Tanks painted white<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for storage tank VOCs are eliminated based on an evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>High VP (≥ 0.5 psia) Products:<br><br>1) IFR with a mechanical shoe primary seal and a rim-mounted secondary seal or primary mechanical shoe seal only<br>2) Tanks painted white or unpainted aluminum<br>3) Utilize submerged fill<br>4) Drain-dry design<br><br>Low VP (< 0.5 psia) Products:<br><br>1) Fixed roof tanks |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | 2) Utilize submerged fill<br>3) Tanks painted white |
| | | $H_2S$ | Dissolved $H_2S$ in the incoming crude will be limited to 50 ppmw. If the dissolved $H_2S$ in the incoming crude exceeds 10 ppmw on a block one-hour basis, the crude will be treated in tank to reduce the dissolved $H_2S$ content to 10 ppmw or below. |
| Tank Truck Loading | VCU-4 | VOC | Step 1 - Identify all control options<br><br>Based on a search of the RBLC, potential control options for “truck” VOCs in the United States from January 1, 2011 through December 22, 2021 include the following:<br><br>1) Transport vehicles limited to DOT pressure-rated trucks meeting NSPS XX vapor-tightness specifications (collection efficiency of 98.7%)<br>2) Capture and route loading vapors to VCU with 99.9% DRE if VOC VP > 0.5 psia<br>3) Inspection of closed vent system in same manner as other piping components in VOC service<br>4) Hard-piped and flanged connections<br>5) Submerged or bottom loading<br>6) Lines/connectors inspected prior to hookup<br><br>Step 2 - Eliminate technically infeasible options<br><br>None of the potential control options for tank truck loading VOCs presented in Step 1 are considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>1) Capture and route loading vapors to VCU with 99.9% DRE if VOC VP > 0.5 psia<br>2) Transport vehicles limited to DOT pressure-rated trucks meeting NSPS |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | XX vapor-tightness specifications (collection efficiency of 98.7%)<br>3) Hard-piped and flanged connections<br>4) Submerged or bottom loading<br>5) Inspection of closed vent system in same manner as other piping components in VOC service<br>6) Lines/connectors inspected prior to hookup<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for tank truck loading VOCs are eliminated based on an<br>evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>1) Capture and route loading vapors to VCU with 99.9% DRE if VOC VP > 0.5 psia<br>2) Transport vehicles limited to DOT pressure-rated trucks meeting NSPS XX vapor-tightness specifications (collection efficiency of 98.7%)<br>a. Enbridge exceeds this limit by complying with requirements of MACT Subpart R vapor-tightness specifications (collection efficiency of 99.2%)<br>3) Hard-piped and flanged connections<br>4) Submerged or bottom loading<br>5) Inspection of closed vent system in same manner as other piping components in VOC service<br>6) Lines/connectors inspected prior to hookup |
| | | $H_2S$ | Thermal control will destroy a minimum of 98% of $H_2S$ vapors. |
| Equipment Leak Fugitives | EPN: FUG | VOC | Step 1 - Identify all control options<br><br>Based on a search of the RBLC, potential control options for “fugitive” VOCs in the |

| **Source Name** | **EPN** | **Pollutant** | **Best Available Control Technology Description** |
|---|---|---|---|
| | | | United States from<br>January 1, 2011 through December 22, 2021 include the following:<br><br>1) TCEQ 28VHP leak detection and repair (LDAR) program<br>2) Proper piping design<br><br>Step 2 - Eliminate technically infeasible options<br><br>None of the potential control options for equipment leak fugitive VOCs presented in Step 1 are<br>considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>1) TCEQ 28VHP leak detection and repair (LDAR) program<br>2) Proper piping design<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for equipment leak fugitive VOCs are eliminated based on an<br>evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>The EIOT will utilize the 28VHP LDAR program and proper piping design on the sources. Enbridge will also implement the 28CNTQ LDAR program on its flanges and connectors at the EIOT, with the exception of the flanges and connectors on the bunker oil tanks (EPNs: BT-910, BT-911, and BT-912) which will be monitored in accordance with the 28VHP LDAR program only.<br><br>Leak level = 500 ppmv |
| | | GHG | Step 1 - Identify all control options<br><br>Based on a search of the RBLC, potential |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | control options for “fugitive” GHGs in the United States from<br>January 1, 2011 through December 22, 2021 include the following:<br><br>Potential control options for fugitive emissions include:<br><br>1) Barrier sealing systems for pumps and compressors<br>2) The installation of rupture discs below pressure relieving devices which discharge to the atmosphere<br>3) The use of valves sealed with bellows to eliminate valve stem packing leaks<br>4) The use of a leak detection and repair (LDAR) program. There are a variety of LDAR programs with differing requirements. The emissions of GHGs are expected to be low, and therefore LDAR programs would not typically be evaluated and selected solely for the control of GHG emissions, but are instead typically evaluated for the control of VOC emissions.<br><br>Step 2 - Eliminate technically infeasible options<br><br>Pumps and compressors are not in natural gas service at the EIOT; therefore, barrier sealing systems for pumps and compressors are not applicable to/not technically feasible for the piping components in GHG service at EIOT.<br><br>The use of valves sealed with bellows to eliminate valve stem packing leaks and the use of an LDAR<br>program are technically feasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>1) Bellows sealed valves are capable of 100% control. Therefore, sealing the valves with bellows is considered the most effective control technology for that source type. |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | 2) LDAR programs typically control emissions of organic compounds, including methane, and the accepted control efficiency can differ based on component type as shown in the emission calculations. Valves and connectors in natural gas service at the EIOT have a 97% control efficiency applied to them due to Enbridge's implementation of the TCEQ's 28VHP and 28CNTQ LDAR programs.<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>In this section cost-effectiveness, energy impacts and environmental effects are considered.<br><br>The EIOT utilizes the 28VHP LDAR program for control of VOC emissions and also uses the 28CNTQ monitoring program on its flanges and connectors. GHG emission reductions would be expected to also result from monitoring and controlling VOC components under these programs. Although it would be technically feasible to evaluate other LDAR programs based upon GHG-specific control, the evaluation of LDAR programs for GHG control is not a process that is typically conducted and would be cost-prohibitive. No negative energy or environmental impacts have been identified associated with the use of the 28VHP and 28CNTQ LDAR programs.<br><br>While bellows sealed valves could eliminate GHG emissions from the valve stems, they are typically available for rising stem valves only and only in small sizes; therefore, they would be expensive to implement for minimal gain in emissions reductions.<br><br>Step 5 - Select BACT<br><br>Given that GHG emissions from fugitive sources are minimal and that |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | implementation of a GHG specific LDAR program would be cost prohibitive, BACT for GHG emissions is determined to be no control; however, the EIOT will continue to utilize the 28VHP and 28CNTQ LDAR programs on the sources indicated in the emission calculations. This LDAR program is expected to yield similar reductions in GHG emissions, and therefore this program will meet and exceed GHG BACT requirements for this source. |
| Storage Tank and Equipment Maintenance, Startup, and Shutdown (MSS) | EPN: MSS-ATM and MSS-CONT | | Step 1 - Identify all control options<br><br>Based on a search of the RBLC, potential control options for “tank” VOCs in the United States from January 1, 2011 through December 22, 2021 include the following:<br><br>Storage Tank MSS:<br><br>1) Emissions from conditions of standing idle, degassing, controlled forced ventilation, and refilling until the roof is refloated will be vented to a vapor combustor with a VOC destruction efficiency of 99%.<br>2) Commence under-roof degassing within 72 hours of landing. Degas every 24 hours unless no standing liquid in tank or vapor pressure of liquid in tank has a VOC partial pressure <0.02 psi.<br>3) Good operational practices.<br>4) Control must be maintained until the VOC concentration is less than 10,000 ppmv VOC (or equivalent for non-VOCs). If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia.<br>5) Minimizing the number and duration of all planned MSS events.<br><br>Equipment MSS:<br><br>1) Managing residual products with vapor pressures > 0.5 psia that are removed |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | from equipment and piping as a result of an MSS activity in a controlled manner. Specifically, the use of air movers, vacuum trucks, and frac tanks equipped with vapor controls and submerged fill pipes to handle these materials.<br>2) Controlled by carbon canisters.<br>3) Good operational practices.<br><br>Step 2 - Eliminate technically infeasible options<br><br>None of the potential control options for storage tank and equipment MSS VOCs presented in Step 1<br>are considered technically infeasible.<br><br>Step 3 - Rank remaining control options<br><br>The following are ranked in order of highest control efficiency to lowest.<br><br>Storage Tank MSS:<br><br>1) Emissions from conditions of standing idle, degassing, controlled forced ventilation, and refilling until the roof is refloated will be vented to a vapor combustor with a VOC destruction efficiency of 99%.<br>2) Control must be maintained until the VOC concentration is less than 10,000 ppmv VOC (or equivalent for non-VOCs). If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia.<br>3) Commence under-roof degassing within 72 hours of landing. Degas every 24 hours unless no standing liquid in tank or vapor pressure of liquid in tank has a VOC partial pressure <0.02 psi.<br>4) Minimizing the number and duration of all planned MSS events.<br>5) Good operational practices.<br><br>Equipment MSS: |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | 1) Managing residual products with vapor pressures > 0.5 psia that are removed from equipment and piping as a result of an MSS activity in a controlled manner. Specifically, the use of air movers, vacuum trucks, and frac tanks equipped with vapor controls and submerged fill pipes to handle these materials.<br>2) Controlled by carbon canisters.<br>3) Good operational practices.<br><br>Step 4 - Eliminate control options based on evaluation of collateral impacts<br><br>None of the potential control options for storage tank and equipment MSS VOCs are eliminated based on an evaluation of collateral impacts.<br><br>Step 5 - Select BACT<br><br>Enbridge proposes to include the following control options:<br><br>Storage Tank MSS:<br><br>1) Emissions from conditions of standing idle, degassing, controlled forced ventilation, and refilling until the roof is refloated will be vented to a vapor combustor with a VOC destruction efficiency of 99%. The permanent and portable VCUs at the EIOT will achieve 99.9% DRE, which exceeds BACT.<br>2) Control will be maintained until the VOC concentration is less than 10,000 ppmv VOC. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream will be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia.<br>3) Commence under-roof degassing within 72 hours of landing. Degas every 24 hours unless no standing liquid in tank or vapor pressure of liquid in tank has a VOC partial pressure <0.02 psi.<br>4) Minimize the number and duration of all planned MSS events. |

| Source Name | EPN | Pollutant | Best Available Control Technology Description |
|---|---|---|---|
| | | | 5) Good operational practices.<br><br>Equipment MSS:<br><br>1) Manage residual products with vapor pressures > 0.5 psia that are removed from equipment and piping as a result of an MSS activity in a controlled manner. Specifically, the use of air movers, vacuum trucks, and frac tanks equipped with vapor controls and submerged fill pipes to handle these materials.<br>2) Control by carbon canisters should a thermal control device not be an option until the VOC concentration is less than 10,000 ppmv or 10 percent of the lower explosive limit (LEL).<br>3) Good operational practices. |

## VII. Air Quality Analysis

The air quality analysis (AQA), as supplemented by the ADMT, is acceptable for all review types and pollutants. The results are summarized below.

This is the third modeling audit for this NSR project number, and the audit was conducted to review updated modeling. This modeling audit memorandum represents a complete summary and the modeling results in this document supersede the corresponding modeling results in the original modeling audit memorandum dated December 22, 2023 (WCC content ID 6868584).

### A. De Minimis Analysis

A De Minimis analysis was initially conducted to determine if a full impacts analysis would be required. The De Minimis analysis modeling results indicate that 1-hr, 3-hr and 24-hr $SO_2$ and 1-hr $NO_2$ exceed the respective de minimis concentrations and require a full impacts analysis. The De Minimis analysis modeling results for annual $SO_2$ and annual $NO_2$ indicate that the project is below the respective de minimis concentrations and no further analysis is required.

The justification for selecting EPA's interim 1-hr $NO_2$ and 1-hr $SO_2$ De Minimis levels is 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], 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 $SO_2$ National Ambient Air Quality Standards (NAAQS).

The ozone De Minimis level is the EPA recommended De Minimis level. The use of the EPA recommended De Minimis level is sufficient to conclude that a proposed source will not cause or contribute to a violation of an ozone NAAQS based on the analyses documented in EPA guidance and policy memoranda[3].

**Table 1. Modeling Results for PSD De Minimis Analysis in Micrograms Per Cubic Meter (µg/m³)**

| Pollutant | Averaging Time | GLCmax[4] (µg/m³) | De Minimis (µg/m³) |
|---|---|---|---|
| $SO_2$ | 1-hr | 94 | 7.8 |
| $SO_2$ | 3-hr | 58 | 25 |
| $SO_2$ | 24-hr | 41 | 5 |
| $SO_2$ | Annual | 0.7 | 1 |
| $NO_2$ | 1-hr | 40 | 7.5 |
| $NO_2$ | Annual | 0.9 | 1 |

The 1-hr $NO_2$ GLCmax is based on the highest five-year average of the maximum predicted concentrations determined for each receptor. The GLCmax for all other pollutants and averaging times represent the maximum predicted concentrations over five years of meteorological data.

**Table 2. Modeling Results for Ozone PSD De Minimis Analysis in Parts per Billion (ppb)**

| Pollutant | Averaging Time | GLCmax (ppb) | De Minimis (ppb) |
|---|---|---|---|
| $O_3$ | 8-hr | 0.3 | 1 |

The applicant performed an $O_3$ analysis as part of the PSD AQA. The applicant evaluated project emissions of $O_3$ precursor emissions ($NO_X$ and VOC). For the project $NO_X$ and VOC emissions, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with EPA's Guideline on Air Quality Models (GAQM). Specifically, the applicant used a Tier 1 demonstration tool

[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
[3] www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html
[4] Ground level maximum concentration

developed by EPA referred to as Modeled Emission Rates for Precursors (MERPs). The basic idea behind MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the worst-case Texas source, the applicant estimated an 8-hr $O_3$ concentration of 0.3 ppb. When the estimates of ozone concentrations from the project emissions are added together, the results are less than the De Minimis level.

### B. Air Quality Monitoring

The De Minimis analysis modeling results indicate that 24-hr $SO_2$ exceeds the respective monitoring significance level and requires the gathering of ambient monitoring information.

The De Minimis analysis modeling results indicate that annual $NO_2$ is below its respective monitoring significance level.

**Table 3. Modeling Results for PSD Monitoring Significance Levels**

| Pollutant | Averaging Time | GLCmax ($\mu g/m^3$) | Significance ($\mu g/m^3$) |
|---|---|---|---|
| $SO_2$ | 24-hr | 41 | 13 |
| $NO_2$ | Annual | 0.9 | 14 |

The GLCmax represents the maximum predicted concentrations over five years of meteorological data.

The applicant did not provide background concentrations for $SO_2$. ADMT reviewed the monitor used by the applicant for the NAAQS analysis. The background concentration for $SO_2$ was obtained from the EPA AIRS monitor 483550025 located at 902 Airport Blvd., Corpus Christi, Nueces County. ADMT used a three-year average (2021-2023) of the 99th percentile of the annual distribution of daily maximum 1-hr concentrations for the 1-hr value (8 $\mu g/m^3$), and a three-year average (2021-2023) of the annual average concentrations for the annual value (0.79 $\mu g/m^3$). The use of this monitor is reasonable based on the applicant's quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site, and county-wide emissions.

Since the project has a net emissions increase of 100 tons per year (tpy) or more of volatile organic compounds or nitrogen oxides, the applicant evaluated ambient $O_3$ monitoring data to satisfy the requirements for the pre-application air quality analysis. A background concentration for $O_3$ was obtained from the EPA AIRS monitor 483550025 located at 902 Airport Blvd., Corpus Christi, Nueces County. A three-year average (2020-2022) of the annual fourth highest daily maximum 8-hr concentrations was used in the analysis (62.7 ppb). The use of this monitor for a background concentration of ozone is reasonable given that it is in the same region as the project site. The applicant did not address updated background data published since the prior modeling submittals. However, ADMT reviewed the most recent design values for this monitor and determined that this does not affect the overall conclusions of the analysis.

### C. National Ambient Air Quality Standards (NAAQS) Analysis

The De Minimis analysis modeling results indicate that 1-hr $SO_2$ and 1-hr $NO_2$ exceed the respective de minimis concentration and require a full impacts analysis. The full NAAQS modeling results indicate the total predicted concentrations will not result in an exceedance of the NAAQS.

**Table 4. Total Concentrations for PSD 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 | 69 | 21 | 90 | 196 |
| $NO_2$ | 1-hr | 126 | 60 | 186 | 188 |

The 1-hr $SO_2$ GLCmax is the maximum five-year average of the 99th percentile of the annual distribution of predicted daily maximum 1-hr concentrations determined for each receptor.

The 1-hr $NO_2$ GLCmax is the highest eighth-high predicted concentration associated with five years of meteorological data.

The applicant did not address impacts associated with a neighboring facility and did not provide sufficient justification for omitting this facility from the NAAQS analysis. ADMT conducted test modeling including the applicable sources from this facility and determined that inclusion of these sources would not change the overall conclusions of the analysis.

A background concentration for $SO_2$ was obtained from the EPA AIRS monitor 483550025 located at 902 Airport Blvd., Corpus Christi, Nueces County. The applicant used a three-year average (2018-2020) of the 99th percentile of the annual distribution of daily maximum 1-hr concentrations for the 1-hr value. The use of this monitor is reasonable based on the applicant's quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site, county-wide emissions, and inclusion of off-property sources in the model demonstration. The applicant did not address updated background data published since the prior modeling submittals. However, ADMT reviewed the most recent design values for this monitor and determined that this does not affect the overall conclusions of the analysis.

A background concentration for $NO_2$ was obtained from the EPA AIRS monitor 482450009 at 1086 Vermont Ave., Beaumont, Jefferson County. The three-year average (2018-2020) of the 98th percentile of the annual distribution of the daily maximum 1-hr concentrations was used for the 1-hr value. The use of this monitor is reasonable based on the applicant’s quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site, county-wide emissions, and inclusion of off-property sources in the model demonstration. The applicant did not address updated background data published since the prior modeling submittals. However, ADMT reviewed the most recent design values for this monitor and determined that this does not affect the overall conclusions of the analysis.

**D. Increment Analysis**

The De Minimis analysis modeling results indicate that 3-hr and 24-hr $SO_2$ exceed the respective de minimis concentrations and require a PSD increment analysis.

**Table 5. Results for PSD Increment Analysis**

| Pollutant | Averaging Time | GLCmax (µg/m$^3$) | Increment (µg/m$^3$) |
|---|---|---|---|
| $SO_2$ | 3-hr | 67 | 512 |
| $SO_2$ | 24-hr | 38 | 91 |

The GLCmax represent the maximum high second high predicted concentrations over five years of meteorological data.

**E. Additional Impacts Analysis**

The applicant performed an Additional Impacts Analysis as part of the PSD AQA. The applicant conducted a growth analysis and determined that population will not significantly increase as a result of the proposed project. The applicant conducted a soils and vegetation analysis and determined that all evaluated criteria pollutant concentrations are below their respective secondary NAAQS. The applicant meets the Class II visibility analysis requirement by complying with the opacity requirements of 30 Texas Administrative Code Chapter 111. The Additional Impacts Analyses are reasonable and possible adverse impacts from this project are not expected.

ADMT evaluated predicted concentrations from the proposed project to determine if emissions could adversely affect a Class I area. The nearest Class I area, Big Bend National Park, is located approximately 574 kilometers (km) from the proposed site.

The predicted concentrations of $PM_{10}$, $PM_{2.5}$, $NO_2$, and $SO_2$ for all averaging times, are all less than de minimis levels at a distance of 1.3 km from the proposed sources in the direction the Big Bend National Park Class I area. The Big Bend National Park Class I area is an additional 572.7 km from the location where the predicted concentrations of $PM_{10}$, $PM_{2.5}$, $NO_2$, and $SO_2$ for all averaging times are less than de minimis. Therefore, emissions from the proposed project are not expected to adversely affect the Big Bend National Park Class I area.

### F. Minor Source NSR and Air Toxics Review

**Table 6. Site-Wide Modeling Results for State Property Line**

| Pollutant | Averaging Time | GLCmax ($\mu g/m^3$) | Standard ($\mu g/m^3$) |
|---|---|---|---|
| $SO_2$ | 1-hr | 122 | 1021 |
| $H_2S$ | 1-hr | 49 | 108 (If property is residential, recreational, business, or commercial) |
| $H_2S$ | 1-hr | 49 | 162 (If property is not residential, recreational, business, or commercial) |

**Table 7. Modeling Results for Minor NSR De Minimis**

| Pollutant | Averaging Time | GLCmax ($\mu g/m^3$) | De Minimis ($\mu g/m^3$) |
|---|---|---|---|
| $PM_{10}$ | 24-hr | 2.6 | 5 |
| $PM_{2.5}$ | 24-hr | 0.7 | 1.2 |
| $PM_{2.5}$ | Annual | 0.1 | 0.13 |
| CO | 1-hr | 28 | 2000 |
| CO | 8-hr | 9 | 500 |

The GLCmax are the maximum predicted concentrations associated with one year of meteorological data.

The $PM_{2.5}$ De Minimis levels are EPA recommended De Minimis levels. The use of EPA recommended De Minimis levels is sufficient to conclude that a proposed source will not cause or contribute to a violation of a $PM_{2.5}$ NAAQS based on the analyses documented in EPA guidance and policy memoranda[5].

To evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with EPA's GAQM. Specifically, the applicant used a Tier 1 demonstration tool developed by EPA referred to as MERPs. Using data associated with the worst-case Texas source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.31079 $\mu g/m^3$ and 0.01045 $\mu g/m^3$, respectively. When these estimates are added to the GLCmax listed in the table above, the results are less than the De Minimis levels.

[5] www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

**Table 8. Minor NSR Production Project-Related Modeling Results for Health Effects since Most Recent Site-Wide Modeling**

| Pollutant & CAS# | Averaging Time | GLCmax (µg/m$^3$) | 25% ESL (µg/m$^3$) |
|---|---|---|---|
| Fuel oil, residual 68476-33-5 | Annual | 2.82 | 25 |

**Table 9. Minor NSR Production Project-Related Modeling Results for Health Effects**

| Pollutant & CAS# | Averaging Time | GLCmax (µg/m$^3$) | 10% ESL (µg/m$^3$) |
|---|---|---|---|
| Fuel oil, residual 68476-33-5 | Annual | 2.82 | 10 |

**Table 10. Minor NSR Maintenance Startup Shutdown (MSS) Project Modeling Results for Health Effects since Most Recent Site-Wide Modeling**

| Pollutant & CAS# | Averaging Time | GLCmax (µg/m$^3$) | 50% ESL (µg/m$^3$) |
|---|---|---|---|
| Fuel oil, residual 68476-33-5 | Annual | 2.82 | 50 |

**Table 11. Minor NSR MSS Project-Related Modeling Results for Health Effects**

| Pollutant & CAS# | Averaging Time | GLCmax (µg/m$^3$) | 25% ESL (µg/m$^3$) |
|---|---|---|---|
| Fuel oil, residual 68476-33-5 | Annual | 2.82 | 25 |

**Table 12. Minor NSR Site-Wide Modeling Results for Health Effects**

| Pollutant | CAS# | Averaging Time | GLCmax (µg/m$^3$) | GLCmax Location | GLCni (µg/m$^3$) | GLCni Location | ESL (µg/m$^3$) |
|---|---|---|---|---|---|---|---|
| Natural gas condensates, petroleum | 64741-47-5 | 1-hr | 37022 | Internal Property Line | 3647 | W Property Line | 3500 |
| Natural gas condensates, petroleum | 64741-47-5 | Annual | 54 | Internal Property Line | 5 | W Property Line | 350 |
| Crude oil, < 1% benzene | NA | 1-hr | 30250 | Internal Property Line | 4006 | W Property Line | 3500 |
| Crude oil, < 1% benzene | NA | Annual | 55 | Internal Property Line | 5 | W Property Line | 350 |
| Fuel oil, residual | 68476-33-5 | 1-hr | 1984 | Internal Property Line | 205 | W Property Line | 1000 |

**Table 13. Minor NSR Hours of Exceedance for Health Effects**

| Pollutant | Averaging Time | 1 X ESL GLCni | 2 X ESL GLCmax | 4 X ESL GLCmax | 10 X ESL GLCmax |
|---|---|---|---|---|---|
| Natural gas condensates, petroleum | 1-hr | 1 | 14 | 13 | 1 |
| Crude oil, < 1% benzene | 1-hr | 2 | 15 | 13 | 0 |

The GLCmax and the GLCni locations are listed in Table 12 above. The locations are listed by their approximate distance and direction from the property line of the project site. See the ADMT project maps for more detail.

Per the applicant, operational restrictions were used to refine the exceedances for the natural gas condensates, petroleum, and crude oil, < 1% benzene analyses. The applicant represents that the uncontrolled tank venting can occur for one hour per year per tank for each of 13 tanks. The applicant's analysis did not account for the exceedances associated with other operating conditions. ADMT reviewed the hours of exceedance at the location of the GLCmax for each pollutant associated with the worst-case non-venting operating scenario and added them to Table 13 above.

<u>Toxicology Review</u>

Toxicology does not anticipate that any short- or long-term adverse health effects will occur among the general public as a result of exposure to the proposed emissions from the facility as summarized in a memo from Stony (Herng-Hsiang) Lo, Ph.D. and Stanley Aniagu, MSc., Ph.D., DABT of the TCEQ Toxicology, Risk Assessment, and Research Division dated April 16, 2025. (Toxicology Control No. 7826B).

**G. Greenhouse Gases**

EPA has stated that unlike the criteria pollutants for which EPA has historically issued PSD permits, there is no National Ambient Air Quality Standard (NAAQS) for GHGs, including no PSD increment. The global climate-change inducing effects of GHG emissions, according to the "Endangerment and Cause or Contribute Finding", are far-reaching and multi-dimensional (75 FR 66497). Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in PSD permit reviews. Quantifying the exact impacts attributable to a specific GHG source obtaining a permit in specific places and points would not be possible [EPA's PSD and Title V Permitting Guidance for GHGs at 48]. Thus, EPA has concluded in other GHG PSD permitting actions it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit.

The TCEQ has determined that an air quality analysis would provide no meaningful data and has not required the applicant to perform one. As stated in the preamble to TCEQ's adoption of the GHG PSD program, the impacts review for individual air contaminants will continue to be addressed, as applicable, in the state's traditional minor and major NSR permits program per 30 TAC Chapter 116.

## VIII. Conclusion

In summary, the applicant has demonstrated that the proposed project's emissions will comply with applicable state and federal rules, meet BACT, and will not adversely affect public health and welfare, which includes NAAQS, additional impacts, minor new source review of regulated pollutants without a NAAQS, increments, and air toxics review. The proposed increases in health effects pollutants will not cause or contribute to any federal or state exceedances. Therefore, emissions from the facility are not expected to have an adverse impact on public health or the environment.

The Executive Director's preliminary determination is to issue Permit No. 122362, PSDTX1430M2, and GHGPSDTX209.