

Jon Niermann, *Chairman*
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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 23, 2021

MR ANDREW MCDANIEL
GENERAL MANAGER
US ECOLOGY TEXAS INC
PO BOX 307
ROBSTOWN TX 78380-0307

Re: Permit Amendment and Renewal
Permit Number: 90163
Expiration Date: July 23, 2031
US Ecology Texas, Inc.
US Ecology Texas
Robstown, Nueces County
Regulated Entity Number: RN101445666
Customer Reference Number: CN603247974

Dear Mr. McDaniel:

US Ecology Texas, Inc. has requested to renew and amend Permit Number 90163.

In accordance with Title 30 Texas Administrative Code Section 116.116(b), Permit Number 90163 is hereby amended. Also, in accordance with 30 TAC Section 116.314(a), your permit is hereby renewed. In addition, with this permitting action, Permit by Rule Registration Numbers 158821, 160662, and 160910 have been voided. This information will be incorporated into the existing permit file.

Enclosed are new general conditions, special conditions, and a maximum allowable emission rates table.

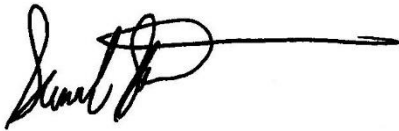
This permit will be in effect for ten years from the date this renewal was issued.

If you have any questions, please contact Mr. Michael Brown at (512) 239-5542 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Mr. Andrew McDaniel
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July 23, 2021

Re: Permit Number: 90163

Sincerely,

A handwritten signature in black ink, appearing to read 'Samuel Short', followed by a long horizontal line extending to the right.

Samuel Short, Deputy Director
Air Permits Division
Office of Air
Texas Commission on Environmental Quality

Enclosure

cc: Air Section Manager, Region 14 - Corpus Christi

Project Number: 317277



Texas Commission on Environmental Quality Air Quality Permit

A Permit Is Hereby Issued To
US Ecology Texas, Inc.
Authorizing the Continued Operation of
Robstown Facility
Located at Robstown, Nueces County, Texas
Latitude 27° 43' 52" Longitude -97° 39' 8"

Permit: 90163

Issuance Date: July 23, 2021

Expiration Date: July 23, 2031



For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code (TAC) Section 116.116 (30 TAC § 116.116)]¹
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]
6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and

operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner; comply with any additional recordkeeping requirements specified in special conditions in the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]

8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources-- Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)]¹
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification in accordance with 30 TAC §101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC§ 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to "air pollution" as defined in Texas Health and Safety Code (THSC) §382.003(3) or violate THSC § 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.¹

¹ Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

Common Acronyms in Air Permits

°C = Temperature in degrees Celsius
°F = Temperature in degrees Fahrenheit
°K = Temperature in degrees Kelvin
µg = microgram
µg/m³ = microgram per cubic meter
acfm = actual cubic feet per minute
AMOC = alternate means of control
AOS = alternative operating scenario
AP-42 = Air Pollutant Emission Factors, 5th edition
APD = Air Permits Division
API = American Petroleum Institute
APWL = air pollutant watch list
BPA = Beaumont/ Port Arthur
BACT = best available control technology
BAE = baseline actual emissions
bbl = barrel
bbl/day = barrel per day
bhp = brake horsepower
BMP = best management practices
Btu = British thermal unit
Btu/scf = British thermal unit per standard cubic foot or feet
CAA = Clean Air Act
CAM = compliance-assurance monitoring
CEMS = continuous emissions monitoring systems
cfm = cubic feet (per) minute
CFR = Code of Federal Regulations
CN = customer ID number
CNG = compressed natural gas
CO = carbon monoxide
COMS = continuous opacity monitoring system
CPMS = continuous parametric monitoring system
DFW = Dallas/ Fort Worth (Metroplex)
DE = destruction efficiency
DRE = destruction and removal efficiency
dscf = dry standard cubic foot or feet
dscfm = dry standard cubic foot or feet per minute
ED = (TCEQ) Executive Director
EF = emissions factor
EFR = external floating roof tank
EGU = electric generating unit
EI = Emissions Inventory
ELP = El Paso
EPA = (United States) Environmental Protection Agency
EPN = emission point number
ESL = effects screening level
ESP = electrostatic precipitator
FCAA = Federal Clean Air Act
FCCU = fluid catalytic cracking unit
FID = flame ionization detector
FIN = facility identification number
ft = foot or feet
ft/sec = foot or feet per second
g = gram
gal/wk = gallon per week
gal/yr = gallon per year
GLC = ground level concentration
GLC_{max} = maximum (predicted) ground-level concentration
gpm = gallon per minute
gr/1000scf = grain per 1000 standard cubic feet
gr/dscf = grain per dry standard cubic feet
H₂CO = formaldehyde
H₂S = hydrogen sulfide
H₂SO₄ = sulfuric acid
HAP = hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
HC = hydrocarbons
HCl = hydrochloric acid, hydrogen chloride
Hg = mercury
HGB = Houston/Galveston/Brazoria
hp = horsepower
hr = hour
IFR = internal floating roof tank
in H₂O = inches of water
in Hg = inches of mercury
IR = infrared
ISC3 = Industrial Source Complex, a dispersion model
ISCST3 = Industrial Source Complex Short-Term, a dispersion model
K = Kelvin; extension of the degree Celsius scaled-down to absolute zero
LACT = lease automatic custody transfer
LAER = lowest achievable emission rate
lb = pound
hp = horsepower
hr = hour
lb/day = pound per day
lb/hr = pound per hour
lb/MMBtu = pound per million British thermal units
LDAR = Leak Detection and Repair (Requirements)
LNG = liquefied natural gas
LPG = liquefied petroleum gas
LT/D = long ton per day
m = meter
m³ = cubic meter
m/sec = meters per second
MACT = maximum achievable control technology
MAERT = Maximum Allowable Emission Rate Table
MERA = Modeling and Effects Review Applicability
mg = milligram
mg/g = milligram per gram
mL = milliliter
MMBtu = million British thermal units
MMBtu/hr = million British thermal units per hour
MSDS = material safety data sheet
MSS = maintenance, startup, and shutdown
MW = megawatt
NAAQS = National Ambient Air Quality Standards
NESHAP = National Emission Standards for Hazardous Air Pollutants
NGL = natural gas liquids
NNSR = nonattainment new source review
NO_x = total oxides of nitrogen

NSPS = New Source Performance Standards
PAL = plant-wide applicability limit
PBR = Permit(s) by Rule
PCP = pollution control project
PEMS = predictive emission monitoring system
PID = photo ionization detector
PM = periodic monitoring
PM = total particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}, as represented
PM_{2.5} = particulate matter equal to or less than 2.5 microns in diameter
PM₁₀ = total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}, as represented
POC = products of combustion
ppb = parts per billion
ppm = parts per million
ppmv = parts per million (by) volume
psia = pounds (per) square inch, absolute
psig = pounds (per) square inch, gage
PTE = potential to emit
RA = relative accuracy
RATA = relative accuracy test audit
RM = reference method
RVP = Reid vapor pressure
scf = standard cubic foot or feet
scfm = standard cubic foot or feet (per) minute
SCR = selective catalytic reduction
SIL = significant impact levels
SNCR = selective non-catalytic reduction
SO₂ = sulfur dioxide
SOCMI = synthetic organic chemical manufacturing industry
SRU = sulfur recovery unit
TAC = Texas Administrative Code
TCAA = Texas Clean Air Act
TCEQ = Texas Commission on Environmental Quality
TD = Toxicology Division
TLV = threshold limit value
TMDL = total maximum daily load
tpd = tons per day
tpy = tons per year
TVP = true vapor pressure
VOC = volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
VRU = vapor recovery unit or system

Special Conditions

Permit Number 90163

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

Federal Program Requirements

2. These facilities shall comply with all applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated for Asbestos and Benzene Waste Operations in 40 CFR Part 61, Subparts A, M, and FF. **(02/16)**

Opacity/Visible Emission Limitations

3. No visible fugitive emissions from plant roads, cement kiln dust (CKD) stockpile and Stabilization Buildings shall leave the property. Visible emissions shall be determined by a standard of no visible emissions at the property line exceeding 30 seconds in duration in any six-minute period as determined using the EPA Test Method 22 or equivalent. If this condition is violated, additional controls or process changes may be required to limit visible particulate matter emissions.

Operational Limitations, Work Practices, and Plant Design

4. The facility shall use the following work practices to minimize particulate matter emissions:
 - A. The cement kiln dust stockpile (EPN FUG2) shall be stored inside the kiln dust storage building (except during delivery) to minimize potential fugitive emissions and shall be sprinkled with water, as necessary, to control dust emissions.
 - B. All unpaved in-plant roads and traffic areas associated with the operation of the waste treatment, storage, and disposal facility shall be sprayed with water and/or environmentally sensitive chemicals upon detection of visible particulate matter (PM) emissions to maintain compliance with the TCEQ rules and regulations regarding the visible PM emissions specified in this permit. **(02/16)**
5. The TDU Steam Boiler, TDU Dryer, and Thermal Oxidizer (EPNs 7, 1, and TO) shall be fired with natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet (dscf). Records of natural gas specifications obtained from the vendor may be used to demonstrate compliance with this requirement. **(02/16)**

Stabilization Operations

6. The waste treatment process shall occur in two stabilization buildings (STAB2 and STAB3). The permit holder may process waste with or without VOC/HAP content in these buildings. When processing waste that contain VOC/HAP, the permit holder shall process waste up to 23.37 tons/hr, calculated based on the weight of waste treated during a day divided by the number of actual hours of operation, and up to 75,000 tons/yr of waste through each of the stabilization buildings, calculated based on the weight of waste receipts during a year. Permit holder shall keep records of the total weight of waste treated in the stabilization building, the VOC/HAP content of the waste,

and the resulting short-term and annual VOC/HAP emissions from the stabilization operations on a 2-yr rolling basis. **(02/16)**

7. The stabilization facilities may treat waste using the following processes: chemical oxidation/reduction and alkylchlorination (solid or liquid waste), micro- and macro-encapsulation (solid waste), stabilization (solid and liquid waste), neutralization (liquid waste), solidification (liquid waste), deactivation (solid or liquid waste), and mechanical (solid waste). **(07/21)**
8. The doors in the Stabilization Buildings shall remain partially enclosed when stabilization operations are in progress, except when in actual use for ingress and egress of personnel, parts, equipment and materials or products. **(07/21)**
9. The following conditions apply only to STAB2 Building: **(02/16)**
 - A. PM emissions from STAB2 Building shall be controlled by one 50,000 scfm baghouse (EPN BH1). **(12/16)**
 - B. For STAB2 building, cement kiln dust (CKD) and lime kiln dust (LKD) reagents may be stored in the CKD Stockpile (FUG-2) and clay reagent in the clay building. **(07/21)**
 - C. VOC concentrations in the blended waste in the STAB2 Building shall not exceed 200,000 ppmw (hourly average, calculated from daily production) and 100,000 ppmw (annual average). The permit holder shall keep records of estimated VOC concentrations on a rolling 2-yr basis and shall make the records available to the TCEQ personnel, representatives of any local program with jurisdiction and EPA. **(05/18)**
 - D. Hazardous Air Pollutant (HAP) concentrations in the blended waste in the STAB2 Building shall not exceed 200,000 ppmw (hourly average, calculated from daily production) and 50,000 ppmw (annual average). The permit holder shall keep records of estimated HAP concentrations on a rolling 2-yr basis and shall make the records available to the TCEQ personnel, representatives of any local program with jurisdiction and EPA. **(05/18)**
10. The following conditions apply only to STAB3 Building: **(02/16)**
 - A. The STAB3 building shall be controlled by two 50,000 scfm baghouses (EPNs BH2 and BH7).
 - B. For STAB3 Building, CKD and LKD reagents may be stored in the CKD stockpile (EPN FUG-2) and clay reagent in the clay building. **(07/21)**
 - C. VOC concentrations in the blended waste in the STAB3 Building shall not exceed 200,000 ppmw (hourly average, calculated from daily production) and 100,000 ppmw (annual average). The permit holder shall keep records of estimated VOC concentrations on a 2-yr rolling basis and shall make the records available to the TCEQ personnel, representatives of any local program with jurisdiction and EPA. **(05/18)**
 - D. Hazardous air pollutant (HAP) concentrations in the blended waste in the STAB3 Building shall not exceed 200,000 ppmw (hourly average, calculated from daily production) and 50,000 ppmw (annual average). The permit holder shall keep records of estimated HAP concentrations on a rolling 2-yr basis and shall make the records available to the TCEQ personnel, representatives of any local program with jurisdiction and EPA. **(05/18)**

Material Usage Flexibility Conditions

11. Except as provided for below, the air contaminants authorized to be emitted are limited to those identified in the permit application dated June 24, 2020. Any modifications or changes in operation resulting in emission increases of any air contaminants represented in the permit application may be authorized through the applicable use of 30 TAC Chapter 106, or 30 TAC Chapter 116. Pollutants from categories of air pollutants not currently authorized on the MAERT cannot be authorized using this special condition. This special condition does not authorize the use of any chlorinated or fluorinated compound when emissions are routed to a thermal control device.

If no physical modification or new construction is required, new compounds may also be added through the demonstrated use of the procedure described below. **(07/21)**

- A. Short-term (pounds per hour [lb/hr]) and long-term (TPY) emissions calculations shall be completed for each contaminant at each affected source shown on the MAERT. Emission rates (ER) shall be calculated as documented in the permit application dated June 24, 2020. The maximum hourly (short-term) or annual (long-term) emission rates from new or existing air contaminants shall not cause any increases in the short- or long-term emission rates as listed on the MAERT. **(07/21)**
- B. Any new air contaminant in the waste to be treated is exempt from paragraphs D through E of this special condition if: **(07/21)**
 - (1) No specific short-term effects screening level (ESL) is included in the most current set of ESLs available through the TCEQ Toxicity Factor Database (must meet NAAQS); or
 - (2) The air contaminant is not included in the most current set of ESLs available through the TCEQ Toxicity Factor Database.

If the compound is not on the current ESL list and does not belong to a category of compounds on the list, the permit holder shall request confirmation from the Toxicology Division that an ESL need not be created for authorization through this condition. If the Toxicology Division determines that an ESL is not required under this condition, confirmation that no ESL is required shall be kept on file by the applicant.

- C. Any air contaminant is exempt from the requirements of subparagraphs D and E of this special condition if: **(07/21)**
 - (1) It is emitted at a rate and has a short- and long-term ESL as stated in the following table; or

Emission Rate (lbs/hr)	Short-term ESL ($\mu\text{g}/\text{m}^3$)	Long-term ESL ($\mu\text{g}/\text{m}^3$)
≤ 0.04	≥ 2 & < 500	≥ 0.2 & < 50
≤ 0.10	≥ 500 & $< 3,500$	≥ 50 & < 350
≤ 0.40	$\geq 3,500$	≥ 350

- (2) it is not sprayed and it has at least one of the following physical characteristics:
 - (a) a vapor pressure less than 0.01 mm Hg (0.0002 psi) at 68°F;
 - (b) a boiling point at atmospheric pressure that is above 400°F (204°C), provided the compound is not heated above room temperature in the process; or

- (c) a molecular weight that is above 200 g/g-mol, provided the compound is not heated above room temperature in the process.
- D. For all other new contaminants or increases in existing air contaminants, the following procedure shall be completed to determine if the short-term impacts are acceptable: **(07/21)**
- (1) Determine the ER of each air contaminant including emissions of the same air contaminant (if an existing air contaminant) from the currently authorized materials that may be emitted at the same time from each emission point.
 - (2) Multiply the emission rate of the air contaminant by the unit impact multiplier (UIM) for each emission point based on the Air Quality Analysis (AQA) performed for the permit application dated June 24, 2020 to determine the maximum off-property impact Ground Level Concentration (GLC_{MAX}) for each emission point.
 - (3) Sum the impacts from each emission point/emission point group to determine a total short-term off-property impact (Total GLC_{MAX}) for the new or existing air contaminant.
 - (4) Compare the total short-term off-property impact to the short-term ESL for the air contaminant as shown below to determine if it is less than or equal to the ESL. If the total off-property impact exceeds the short-term ESL, then a permit amendment is required to authorize the emission rate for the air contaminant.

$$\text{Total } GLC_{MAX} \leq \text{ESL}_{SHORT}$$

Where:

Total GLC_{MAX} = The sum of the short-term GLCs from each emission point.

ESL_{SHORT} = The short-term ESL of the new or existing air contaminant from the most current set of ESLs available through the TCEQ Toxicity Factor Database and the date of the database retrieval or as specifically derived by the TCEQ Toxicology Division. The ESL shall be obtained in writing prior to the use of the new or increased air contaminant.

- E. For all other new air contaminants or increases in existing air contaminants, the following procedure shall be completed to determine if the annual impacts are acceptable.
- (1) Determine the annual emission rate (tpy) of each air contaminant including emissions of the same air contaminant (if an existing air contaminant) from the currently authorized materials that may be emitted at the same time from each emission point.
 - (2) Convert the annual emission rate to an hourly emission rate using 8,760 hours per year and 2,000 pounds per ton.
 - (3) Multiply the hourly emission rate (lb/hr) of the air contaminant determined in paragraph E(2) of this special condition by the unit impact multiplier for each emission point in paragraph D(2) of this special condition to determine the off-property impact GLC_{MAX} for each emission point.
 - (4) Sum the impacts from each emission point to determine a total off-property impact (Total GLC_{MAX}) for the new or existing air contaminant.
 - (5) Multiply the total off-property impact (Total GLC_{MAX}) determined in paragraph E(4) of this special condition by 0.08 to determine the annual off-property impact (Annual GLC_{MAX}) for the new or existing air contaminant.

- (6) Compare the annual off-property impact to the annual ESL for the air contaminant as shown below to determine if it is less than or equal to the ESL. If the annual off-property impact exceeds the annual ESL, then a permit amendment is required to authorize the emission rates for the air contaminant.

$$\text{Annual GLC}_{\text{MAX}} \leq \text{ESL}_{\text{ANNUAL}}$$

Where:

$\text{ESL}_{\text{ANNUAL}}$ = The annual ESL of the new or existing air contaminant from the most current set of ESLs available through the TCEQ Toxicity Factor Database or as specifically derived by the TCEQ Toxicology Division.

- F. The permit holder shall maintain records of the information below and the demonstrations in steps A and B above. The following documentation is required for each contaminant in the waste to be treated:
- (1) Chemical name(s), composition, and chemical abstract registry number if available.
 - (2) Henry's Law Constant and the Diffusivity in water and in air.
 - (3) Molecular weight.
 - (4) Date new compound handling commenced.
 - (5) Maximum concentration of the chemical in weight percent in the waste material to be treated.

12. The permit holder shall maintain records of the concentration of contaminants identified in Attachment 2 and any newly added contaminant(s) as per SC.11 in the waste material to be treated, including Hazardous Air Pollutants (HAPs), on a rolling 12-month basis, and the records shall be updated monthly in order to demonstrate compliance with the MAERT. **(02/16)**

Catalyst Product Packaging

13. Reclaimed catalyst packaging shall be performed in a partially enclosed building. **(02/16)**
14. The Catalyst Building shall be controlled by one 20,000 scfm baghouse (EPN BH 4) meeting the exit grain loading emission factor of 0.01 grains/scf. **(12/16)**
15. The catalyst processing rate shall not exceed 12 tons per hour (calculated based on daily production). The permit holder shall keep records of the catalyst processing rate on a 2-year rolling basis and shall make them available upon request of personnel from the TCEQ, any local program with jurisdiction or EPA. **(02/16)**

Particulate Matter Control

16. Sources emitting particulate matter shall be subject to the following:
- A. Particulate matter grain loading shall not exceed 0.01 grains per dry standard cubic foot (gr/dscf) of air from the Catalyst Building Baghouse vent (EPN BH4). Particulate matter grain loading shall not exceed 0.01 gr/scf from the Reclamation Facility bag house/scrubber (EPN BH/Venturi) since it is primarily a steam filter. Particulate matter grain loading shall not

exceed 0.005 gr/dscf of air from the Stabilization Building 2 and 3 Baghouses (EPNs BH1, BH2, and BH7.) **(07/21)**

- B. Visible emissions to the atmosphere from all bag houses, bin vents and stacks shall not exceed 5.0 percent opacity averaged over a six-minute period as determined using EPA Test Method 9 or equivalent.
 - C. All vents will be inspected for visible emissions once per day when operating.

If this condition is violated, additional controls or process changes may be required to limit visible particulate matter emissions. Records shall be maintained on a rolling 2-yr basis and shall be made available to personnel from the TCEQ, any local program having jurisdiction or the EPA. **(02/16)**
17. The bag houses and bin vents covered by this permit shall not operate unless associated process equipment are maintained in good working order and operating. For baghouses, a spare-parts filter inventory will be maintained on site. Records shall be maintained of all inspections and maintenance performed. **(02/16)**
18. Dust collection systems (bag houses) shall be subject to the following;
- A. The dust collection systems in the stabilization and catalyst packaging buildings shall be equipped with real-time performance monitoring systems that ensure proper operation of the baghouses. The performance monitoring system shall be equipped with an alarm system that will indicate an out of range differential pressure and a need for bag filter cleaning or filter bag replacements. **(07/21)**
 - B. The differential pressure across each bag house (EPNs BH1, BH2, BH4, and BH7 at the Stabilization and Catalyst Processing Buildings; and BH/venturi at the Reclamation Facility) shall be monitored and recorded at least once a day when operating. For all Stabilization and Catalyst Processing bag houses, the pressure drop shall be at least 0.5 inches H₂O and shall not exceed 17.0 inches H₂O (BH1) and 20 inches H₂O (BH2, BH4, and BH7). For BH/Venturi scrubber in the TDU area, the pressure drop shall be at least 2.0 inches H₂O and shall not exceed 22.0 inches H₂O. Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent. For bag houses, the monitoring data shall be accurate to within 0.5 inches water gauge pressure or 0.5 percent of span. For scrubber, the monitoring data shall be accurate to within 1-inch water gauge pressure or 2% of span. **(07/21)**
 - C. Quality assured (or valid) data must be generated when the facility generating the particulate emissions is operating except during the performance of a daily zero check. Loss of valid data due to periods of monitor breakdown, 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 hours) that the facility generating particulate emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. **(02/16)**
19. The permit holder shall install a flow indicator to monitor the circulation rate to the Venturi Scrubber (EPN BH/Venturi) to assure that the minimum liquid flow to the Venturi Scrubber shall be at least 20 gpm when the spray pump is on. Inspection of the circulation rate shall be performed at least once an hour. Corrective actions shall be taken immediately if the minimum flow rate falls below 20 gpm. Noncompliant circulation rates and the corrective actions taken shall be recorded. **(02/16)**

Reclamation Facility-Receiving Operations

20. The Reclamation Facility is authorized to reclaim oil from oil bearing waste (liquid or high solid), spent catalyst, and alcohol-type light-end constituents. **(07/21)**
21. The following conditions apply to the liquid waste received. **(02/16)**
- A. The liquid feed received at the Reclamation Facility shall be transferred to any of the fixed roof tanks (Tanks T5, T10, T11, T12, T13, T16, T17, T30, T31, T32, T33, T35, T36, T37, T40, T41, T42, T43, or WT1) and the tanks except tank T5 may be heated by the 8 MMBtu/hr package boilers (EPN 7). **(07/21)**
 - B. The Reclamation Facility may process 10,000,000 gallons per year (gpy) of liquid feed received. The permit holder shall maintain records of the volume of liquid feed received (calculated based on the weight of waste receipts during a year) on a 2-yr rolling basis and shall make the records available upon request of personnel from the TCEQ, any local program having jurisdiction and EPA. **(07/21)**
 - C. VOC concentration in the liquid feed stored in the receiving tanks shall not exceed 250,000 ppmw (hourly average, calculated from daily production) and 40,000 ppmw (annual average). Permit holder shall keep records of concentrations on a 2-year rolling basis and shall make the records available upon request from the personnel from the TCEQ, any local program having jurisdiction or EPA.
 - D. Emissions from the liquid feed tank vents shall be routed to the thermal oxidizer (EPN TO) for control. The carbon canister system (EPN CARBFLT3) shall be used as a backup control in cases where the TO is undergoing maintenance or not operating.
22. The following conditions apply to high solids waste: **(02/16)**
- A. VOC concentration in the solids material receiving bins (EPN BIN-FUG) shall not exceed 700,000 ppmw (hourly average, calculated from daily production) and 250,000 ppmw (annual average, calculated based on the weight of waste receipts during a year). Permit holder shall maintain records of estimated VOC concentration in the solids material receiving bins on a 2-yr rolling basis and shall make the records available upon request of personnel from TCEQ, any local program having jurisdiction and EPA.
 - B. The Reclamation Facility may process high solids waste at a throughput rate of solids received containing VOCs such that the actual controlled emissions from the TDU process vent after combustion in the thermal oxidizer remain below 0.1 ton/yr. Permit holder shall keep records of the total weight of high solids received for processing in the TDU, the VOC content of those solids, and the resulting controlled annual VOC emissions from the TDU process vent stream (based on the measured control efficiency from the most recent stack test data), on a 2-yr rolling basis and shall make them available upon request of personnel from the TCEQ, any local program having jurisdiction and EPA. **(07/21)**

Reclamation Facility-Liquid Processing Operations

23. Liquid feed from the storage tanks may be sent to a centrifuge which shall be vented to the thermal oxidizer (EPN TO) by a closed vent system. **(02/16)**

24. The centrifuge cakes shall be collected in the cake roll off boxes (EPNs BOX-1, BOX-1B, and BOX-1C) for further reclamation in the Thermal Desorption Unit (TDU). **(07/21)**
25. All vents from the feed tanks, reclaimed oil tanks, the vents from surge tank (Tank T34), Mix tank (Tank T5), filtrate tank (Tank T6), filtrate skim tank (Tank T6A) and condensate tank (Tank T3) shall be vented to the primary control device; Thermal oxidizer (EPN TO). The carbon canister (EPN CARBFLT3) shall operate as backup to control emissions from the tank vent systems at times the thermal oxidizer is down for maintenance or not operating, not to exceed 5% of the time vents are controlled. **(07/21)**
26. All non-oil liquids, storm water and wash water collected within the containment area of the Liquid Processing may be routed through any of the fixed tank roof tanks which are connected to the facility's closed tank vent system or temporary tanks for further processing before they are sent for disposal at the deep well. **(02/16)**

Reclamation Facility-Solids Processing Operations

27. Steam air emissions from the desorbed product (including desorbed spent catalyst) cooler shall either pass through a baghouse or a Venturi Scrubber (EPN BH/Venturi). **(02/16)**
28. Desorbed cooled solids shall be transferred by a conveyor system (EPN 8A) that discharges the cooled solids into a desorbed solids bin (EPN 8B) through a drop sock. **(02/16)**
29. All vapors that are not recovered (noncondensable gases) in the Gas Treatment System (GTS) shall be sent back to the dryer in the TDU and/or to the process vents. The noncondensable gases that are not recycled back to the process from GTS shall be discharged to the thermal oxidizer (EPN TO). **(02/16)**

Reclamation Facility - Tanks

30. Tanks T5, T10, T11, T12, T13, T16, T17, T30, T31, T32, T33, T35, T36, T37, T40, T41, T42, T43, and WT1 may store the liquid feed, rainwater/wash water and reclaimed oil at the Reclamation Facility. **(07/21)**
31. All storage tanks at the facility shall be equipped with a closed vent system and shall vent to a control device (either a carbon adsorption system having a 95% control efficiency or the thermal oxidizer having 99.9% control efficiency).

In accordance with the permit, additional storage tanks not equipped with a closed vent system that vent to a control device (either a carbon adsorption system having a 95% control efficiency or the thermal oxidizer having 99.9% control efficiency) will be subject to the following requirements: a) except for labels, logos, etc. not to exceed 15 percent of the tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white or unpainted aluminum, and b) be equipped with permanent submerged fill pipes. **(02/16)**

32. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in

degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures. **(07/21)**

Emissions from tanks shall be calculated using the methods that were used to determine the MAERT limits in the permit application (Form PI-1 dated June 24, 2020). Sample calculations from the application shall be attached to a copy of this permit at the plant site. **(07/21)**

Reclamation Facility- Product Loading into Trucks

33. All loading emissions at the Reclamation Facility related to the reclaimed oil shall be vented to the CAS and/or TO. **(07/21)**
34. 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. Emissions shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources – Loading Operations." **(02/16)**
35. 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 connectors. **(02/16)**
36. Loading emissions shall be vented to the thermal oxidizer (EPN TO). Carbon Canister System (CAS) shall be used as a backup at times TO is not operating and/or undergoes maintenance not to exceed 5% of the time loading emissions are vented. **(02/16)**
37. Each tank truck shall pass vapor-tight testing every 12 months using the methods described in Title 40 Code of Federal Regulations Part 60 (40CFR 60), Subpart XX. **(02/16)**

Reclamation Facility - Thermal Oxidizer (EPN: TO)

38. The thermal oxidizer shall abate emissions from all tanks, centrifuges, shredder, Distillation Unit (DU), process streams, product loading, Dissolved Air Flotation (DAF) Unit, MSS tank purging and MSS equipment purging. **(07/21)**
39. The thermal oxidizer shall maintain the VOC concentration in the exhaust gas less than 10 ppmv on a dry basis, (reported as propane) corrected to 3 percent oxygen, or achieve a VOC destruction efficiency greater than 99.9 percent. **(02/16)**
40. The thermal oxidizer firebox exit temperature shall be maintained at not less than 1400°F and a minimum of 20% excess air shall be provided while waste gas is being fed into the oxidizer. The hourly rolling average temperature shall be at greater than the respective hourly average maintained during the most recent satisfactory stack testing required by Special Condition No. 50

and minimum of 20% excess air shall be provided while waste gas is being fed into the oxidizer, or the TDU automatic waste feed cutoff interlock shall activate and stop feed to the TO. **(02/16)**

41. The thermal oxidizer exhaust temperature shall be continuously monitored and recorded at one-minute frequency when waste gas is directed to the oxidizer. The recorded temperature measurements shall also be reduced to an averaging period of 60 minutes (hourly rolling average). 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 $\pm 2.5^{\circ}\text{C}$. **(02/16)**
42. Quality assured (or valid) data must be generated when the thermal oxidizer is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the thermal oxidizer operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. **(02/16)**

Carbon Adsorption System (CAS) (EPNs CARBFLT1, CARBFLT2 and CARBFLT3)

43. The tanks S1, S2, M3 and M6 are limited to storing wastewater. Vents from the wastewater tanks S1, S2, M3 and M6 shall be controlled by the carbon adsorption system (EPNs CARBFLT1 and CARBFLT2) consisting of at least two activated carbon canisters that are connected in series with adequate carbon canister supply for change-outs. The carbon adsorption capacity (carbon saturation time) for each CAS shall be 10 months (300 days). The permit holder shall sample each CAS at a frequency of 30%, 60% and 90% of the carbon saturation time. The carbon shall be replaced at a minimum at 90% of the carbon saturation time or earlier if breakthrough for VOC is indicated. **(05/18)**
44. Vents from all feed tanks, process tanks and reclaimed oil tanks in the Reclamation Facility shall be controlled by a carbon adsorption system (EPN CARBFLT3) consisting of at least two activated carbon canisters that are connected in series with adequate carbon canister supply for change-outs. CARBFLT3 shall only be used as a control device when the thermal oxidizer (TO) which is the primary control device that operates continuously is down for maintenance or not operating. CARBFLT3 use shall not exceed 5% of the total operation time for TO. The permit holder shall sample the CAS which will operate intermittently, at a frequency of 30% of the carbon saturation time of the actual carbon use. The carbon shall be replaced at a minimum at 90% of the saturation time of actual carbon use or earlier if breakthrough for VOC is indicated. **(07/21)**
45. The sampling point for each CAS shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during the operations that cause maximum emissions. **(02/16)**
46. VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), a TCEQ-approved alternative detector, or a VOC monitoring instrument as specified in Section 6 of EPA Method 21. The instrument /FID must meet all requirements specified in Section 8 of EPA Method 21 (40 CFR 60, Appendix A). Sampling and analysis for VOC breakthrough shall be performed as follows: **(02/16)**

- A. Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain less than 0.1 ppmv total hydrocarbons. Span calibration gas shall be methane at a concentration within ± 10 percent of 50 ppmv and certified by the manufacturer to be ± 2 percent accurate or with a compound gas meeting all the specifications/requirements detailed in Section 7.4 of EPA Method 21. Calibration error for the zero and span calibration gas checks must be less than ± 5 percent of the span calibration gas value before sampling may be conducted.
 - B. The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sample ports or connections must be designed such that air leakage into the sample port does not occur during sampling.
 - C. During sampling, data recording shall not begin until after two times the instrument response time. The VOC concentration shall be monitored for at least 5 minutes, recording 1-minute averages, during maximum process venting.
 - D. Breakthrough is defined as the highest measured VOC concentration at or exceeding 50 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 shall be maintained at the site to replace spent carbon such that replacements can be done in the above specified time frame.
 - E. Alternate monitoring or sampling requirements that are equivalent or better may be approved by the TCEQ Regional Manager. Alternate requirements must be approved in writing before they can be used for compliance purposes.
 - F. Records of CAS monitoring maintained at the plant site, shall include (but are not limited to) the following:
 - (1) Sample time and date.
 - (2) Monitoring results (ppmv).
 - (3) Corrective action taken including the time and date of that action.
 - (4) Process operations occurring at the time of sampling.
 - (5) Canister replacement log.
47. 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 and expiration date shall be recorded. **(05/18)**
48. Reclamation Facility-Piping, Valves, Connectors, Pumps, Agitators and Compressors – 28M **(07/21)**
- A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.5 pounds per square inch, absolute (psia) at 100°F or at maximum process operating temperature if less than 100°F or (2) where the 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 by the end of the 72 hours period following the creation of the open-ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Seal less/leak less valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR Part 60, appendix A. The gas analyzer shall be calibrated with methane or as specified in Method 21 Section 7. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs are being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, 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.

- 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. Seal systems that prevent emissions may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure or seals degassing to vent control systems kept in good working order.

Submerged pumps or seal less 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, connectors, compressor seals, agitator seals, and pump seals found to be emitting VOC in excess of 10,000 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown, 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. At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.
- I. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument

readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.

- J. Fugitive emission monitoring required by an applicable New Source Performance Standard (NSPS), 40 CFR Part 60, or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS), 40 CFR Part 61, may be used in lieu of Items F through I of this condition.
- K. Compliance with the requirements of this condition does not assure compliance with requirements of NSPS or NESHAPS and does not constitute approval of alternate standards for these regulations.

Landfill Operations

- 49. Landfill operations shall consist of cells 50 (active/preparing for closure), 51 (active/in construction), and 52 (future). Cells 51 and 52 will be completed in phases of subcells being constructed in pairs. The solids to be deposited in the landfill may contain VOCs or solid contaminants. All waste containing VOCs that is treated at the facility and then landfilled or directly landfilled shall not exceed 199,959 tpy (181,440 Mg/yr), this total does not include reagents added for processes listed in Special Condition No. 7. Waste that is landfilled shall be managed as required under RCRA Permit No. 50052. Water or other suitable materials may be used to aid in dust suppression during unloading, moving, and spreading. **(07/21)**

Initial Determination of Compliance:

- 50. The permit holder shall perform stack sampling and other testing as required to establish actual pattern and quantities of air contaminants being emitted into the atmosphere from the Thermal Oxidizer (EPN TO), TDU Bag House/Venturi Scrubber (EPN BH/Venturi) and one bag house in the solid processing area (either EPNs BH1, BH2, BH7) and catalyst processing area (EPN BH4) to demonstrate compliance with the MAERT. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods. **(02/16)**

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 Thermal Oxidizer (EPN TO) to be tested for include NO_x, SO₂, As, HCl and HF. An initial stack test shall be performed for bromine and iodine from the TO at the time the facility processes bromine or iodine containing waste. Air Contaminants emitted from TDU Bag House/Venturi Scrubber (EPN BH/Venturi) and the bag house in the solid processing area and catalyst processing area to be tested for include (but are not limited to) PM₁₀/PM_{2.5}.
- 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 as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.
- D. The facility being sampled shall operate such that for normal operations, worst case emissions shall be created during stack emission testing for each air contaminant required to be tested. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

During subsequent operations, if the conditions that are expected to cause maximum emissions are not created during the test period, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.
- E. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:
 - One copy to the appropriate TCEQ Regional Office.
 - One copy to each local air pollution control program.

Cooling Towers

- 51. The cooling tower (EPN CT) shall be operated and monitored in accordance with the following:
(07/21)

- A. The cooling tower water shall be monitored monthly for VOC leakage from heat exchangers in accordance with the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) and EPA Method 8260B, or another air stripping

method approved by the TCEQ Executive Director. Six months after the issuance of this permit (TCEQ Project No. 317277), the permit holder may submit a request to the TCEQ Executive Director to utilize EPA Method 8260B, in lieu of utilizing TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) and EPA Method 8260B, as the method for monitoring cooling tower water in accordance with this special condition. **(07/21)**

- B. Cooling tower water VOC concentrations above 0.08 ppmw indicate faulty equipment. Equipment shall be maintained so as to minimize VOC emissions into the cooling water. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs. Emissions from the cooling tower are not authorized if the VOC concentration of the water returning to the cooling tower exceeds 0.8 ppmw. The VOC concentrations above 0.8 ppmw are not subject to extensions for delay of repair under this permit condition. The results of the monitoring and maintenance efforts shall be recorded. **(07/21)**
- C. Each cooling tower shall be equipped with drift eliminators having manufacturer's design assurance of 0.005% drift or less. Drifts eliminators shall be maintained and inspected at least annually. The permit holder shall maintain records of all inspections and repairs. **(07/21)**
- D. Total dissolved solids (TDS) shall not exceed 3000 parts per million by weight (ppmw). Dissolved solids in the cooling water drift are considered to be emitted as PM, PM₁₀, and PM_{2.5} as represented in the permit application calculations. **(07/21)**
- E. Cooling water shall be sampled at least once per week for TDS. **(07/21)**
- F. Cooling water sampling shall be representative of the cooling tower feed water and shall be conducted using approved methods. **(07/21)**
 - (1) The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, and SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. Water samples should be capped upon collection, and transferred to a laboratory area for analysis.
 - (2) Alternate sampling and analysis methods may be used to comply with D(1) with written approval from the TCEQ Regional Director.
 - (3) Records of all instrument calibrations and test results and process measurements used for the emission calculations shall be retained.
- G. Emission rates of PM, PM₁₀ and PM_{2.5} shall be calculated using the measured TDS, the design drift rate and the daily maximum and average actual cooling water circulation rate for the short- and long-term average rates. Alternately, the design maximum circulation rate may be used for all calculations. Emission records shall be updated monthly. **(07/21)**

Maintenance, Startup and Shutdown

52. This permit authorizes the emissions from the facilities operated under this permit for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit. **(02/16)**

Attachment A identifies the inherently low emitting MSS activities that may be performed at the plant. Emissions from activities identified in Attachment A shall be considered to be equal to the potential to emit represented in the permit application. The estimated emissions from the activities

listed in Attachment A must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

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

The performance of each planned MSS activity not identified in Attachments A or 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. These records shall be made available to the personnel from the TCEQ, any local program having jurisdiction or the EPA.

53. This permit authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, facilities used for painting or abrasive blasting, portable control devices identified in Special Condition 59, 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 operating under this permit, and (c) does not operate as a replacement for an existing authorized facility. **(02/16)**
54. Process units and facilities, with the exception of those identified in Special Conditions 55, 56, 57, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements. **(02/16)**
 - 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 Attachment 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 54. 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 (Thermal Oxidizer).
 - (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 53.E must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B.

55. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below. **(02/16)**

A. VOC concentration shall be measured using an instrument meeting all the requirements and calibrated as specified in EPA Method 21 (40 CFR 60, Appendix A). 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. 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 (this should match the standard used for the calibration). 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 that can be converted using a documented or demonstrated correction factor to be 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.

56. Fixed roof storage tanks are subject to the following requirements: **(02/16)**

A. The tank shall not be opened or ventilated without control, except as allowed by (1) or (2) below until one of the criteria in Part B of this condition is satisfied.

- (1) Minimize air circulation in the tank vapor space

- (a) One manway may be opened to allow access to the tank to remove or devolatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or devolatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.
 - (b) Access points shall be closed when not in use.
 - (2) Minimize time and VOC partial pressure
 - (a) The VOC partial pressure of the liquid remaining in the tank shall not exceed 0.044 psi as documented by the method specified in Part B(1) of this condition;
 - (b) Blowers may be used to move air through the tank without emission control at a rate not to exceed 4,500 cfm for no more than 48 hours. All standing liquid shall be removed from the tank during this period.
 - (c) Records shall be maintained of the blower circulation rate, the duration of uncontrolled ventilation, and the date and time all standing liquid was removed from the tank and will be made available to the personnel from the TCEQ, any local program with jurisdiction or the EPA.
- B. The tank may be opened without restriction and ventilated without control, after all standing liquid has been removed from the tank or the liquid remaining in the tank has a VOC partial pressure less than 0.02 psia. These criteria shall be demonstrated in any one of the following ways.
 - (1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. This liquid shall be added during tank degassing if practicable. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.
 - (2) If water is added or sprayed into the tank to remove standing VOC, one of the following must be demonstrated:
 - (a) Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR 435 Subpart A, Appendix 1.
 - (b) Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA method 1664 (may also use Method 8260B or 5030 with Method 8015 from SW-846).
 - (c) Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1000 ppmv through the procedure in Special Condition 54.
 - (3) No standing liquid verified through visual inspection.
- C. The occurrence of each degassing and the associated emissions shall be recorded, and the rolling 12-month tank cleaning 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) for the purpose of estimating emissions, the date, time, and other information specified for each of the following events:
 - (a) start and completion of controlled degassing, and total volumetric flow,
 - (b) all standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank including volumes and vapor pressures to reduce tank liquid VOC partial pressure to <0.02 psi,
 - (c) if there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow,
 - (3) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events a and c with the data and methods used to determine it. Records shall be maintained and shall be made available to the personnel from the TCEQ, any local program with jurisdiction or EPA.
57. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site: **(02/16)**
- A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psi at 95°F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.
 - B. Equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.
 - C. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day when the VOC partial pressure of any liquid vacuumed into the truck is greater than 0.5 psi.
 - (1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC partial pressure is greater than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC partial pressure is greater than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.
 - (2) 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.
 - (3) 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 54.B.
 - (4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
 - D. When the liquids vacuumed into the trucks have a VOC partial pressure greater than 0.5 psi, then 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 A through D of this special condition do not apply.
58. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities. **(02/16)**
- A. The exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective 60 days from the issue date of this permit amendment received on 7/17/2012. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled.
 - 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 100 gallons of liquid that are closed such that the vessel does not vent to atmosphere.
 - D. 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. 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."
 - E. 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.
59. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit. **(02/16)**
60. 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. **(02/16)**

- 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 54.A or 54.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 and the expiration date shall be recorded.

B. Thermal Oxidizer operating in accordance with SCs.38 through 42.

61. If spray guns are used to apply paint, they shall be airless, high volume low pressure (HVLP), or have the same or higher transfer efficiency as airless or HVLP spray guns. **(02/16)**
62. Emissions from all painting activities, except for minor painting identified in Attachment A to this permit, at this site must satisfy the criteria below. New compounds may also be added through the use of the procedure below. **(02/16)**

- A. Short-term (pounds per hour [lb/hr]) and annual (TPY) emissions shall be determined for each chemical in the paint as documented in the permit application. The calculated emission rate shall not exceed the maximum allowable emissions rate at any emission point.
 - B. The Effect Screening Level (ESL) for the material shall be obtained from the current TCEQ ESL list or by written request to the TCEQ Toxicology Division.
 - C. The total painting emissions of any compound must satisfy one of the following conditions:
 - (1) The total emission rate is less than 0.1 lb/hr and the ESL greater than or equal to 2 $\mu\text{g}/\text{m}^3$, or
 - (2) The emission rate of the compound in pounds per hour is less than the ESL for the compound divided by 1000 ($\text{ER} < \text{ESL}/1000$).
 - D. The permit holder shall maintain records of the information below and the demonstrations in steps A through C above. The following documentation is required for each compound:
 - (1) Chemical name(s), composition, and chemical abstract registry number if available.
 - (2) Material Safety Data Sheet.
 - (3) Maximum concentration of the chemical in weight percent
 - (4) Paint usage and the associated emissions shall be recorded each month and the rolling 12-month total emissions updated.
63. No visible emissions shall leave the property due to painting or abrasive blasting. **(02/16)**
64. Black Beauty and Garnet Sand may be used for abrasive blasting. The permit holder may also use blast media that meet the criteria below: **(02/16)**
- 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 effects screening level (ESL) less than 50 micrograms per cubic meter as identified in the most recently published TCEQ ESL list shall not exceed the $\text{ESL}_{\text{metal}}/1000$.
 - C. The MSDS for each media used shall be maintained on site.
 - D. Blasting media usage and the associated emissions shall be recorded each month and the rolling 12-month total emissions updated.
65. The treated process water, wash water, and storm water from the Reclamation Operations at the facility shall be deposited in the on-site deep well or sent offsite for disposal. During times deep well is unavailable for disposal, the permit holder may use temporary frac tanks until the deep well is operational. **(07/21)**
66. Planned maintenance activities must be conducted in a manner consistent with good practice for minimizing emissions, including the use of air pollution control equipment, practices and processes. All reasonable and practical efforts to comply with Special Conditions 50 and 52 through 65 must be used when conducting the planned maintenance activity, until the commission determines that the efforts are unreasonable or impractical, or that the activity is an unplanned maintenance activity. **(02/16)**

67. Wastewater from the washout facility (EPN Washout) shall drain to two covered sumps via trench and loaded into vacuum truck at the end of each day, delivered to storage tanks and then disposed on-site via deep well-injection. **(07/20)**
68. The following sources and/or activities listed below are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). The list is not intended to be all inclusive and can be altered without modifications to this permit: **(07/21)**

Authorizations Incorporated by Reference

Operation/Process	PBR No.	Registration No.
Washout Facility Heaters	106.183, 106.261, 106.262	144361
Temporary MSS Facilities	106.263	148495
Spent Batteries, Catalyst Bagging, and Flip Screener Operations	106.261, 106.262, 106.511	161357
Finger Screen	106.261, 106.262	163034

Date: July 23, 2021

Attachment A

Inherently Low Emitting Activities

Activity	Emissions				
	VOC	NO _x	CO	PM	H ₂ S/SO ₂
Management of sludge from pits, ponds, sumps, and water conveyances	X				
Aerosol Can Use	X				
Calibration of analytical equipment	X	X	X		X
Carbon can replacement	X				
Catalyst charging/handling	X			X	
Instrumentation/ analyzer maintenance	X				
Meter proving	X				
Replacement of analyzer filters and screens	X				
Hydroblast Cleaning	X			X	
Maintenance on water treatment systems (cooling, boiler, potable)	X				
Use of aqueous based detergents, soap, surfactants and other cleaning solutions	X				
Cleaning sight glasses	X				

Date: July 23, 2021

Attachment B

Routine Maintenance Activities

Pump repair/replacement

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

Compressor repair/replacement

Heat exchanger repair/replacement

Vessel repair/replacement

Centrifuges

Cross-over ducts

Pugmill

Carbon Canisters

Dryer Entry

Cyclone Entry

Scrubber Entry

Baghouse Entry

PS-1 Entry

HX-1 Entry

HX-2 Entry

HX-1A and HX-2A Cleaning

Mist Eliminator Media Replacement

Thermal Oxidizer Entry

Reclamation Facility Tank Entry and Cleaning

Date: July 23, 2021

Attachment C

Maintenance, Startup and Shutdown (MSS) Activity Summary

Facilities	Description	Emissions Activity	EPN
All Process Units/ Process Tanks	Process Unit /Process Tank Shutdown/ Depressurize/Drain	Vent to Thermal Oxidizer (TO) Or Carbon Filter 3	TO-VNTMSS or CARBFLT3
All Process Units/Process Tanks	Process Unit Purge/Degas/Drain	Vent to Atmosphere	EQUIP-MSS
All Process Tanks Except Wastewater Tanks M3, M6, S1 and S2	Tank Cleaning	Cleaning Activity and Solvents After Control	TANK-MSS
Wastewater Tank Cleaning (M3, M6, S1, S2)	Tank Cleaning	Cleaning Activity and Solvents After Control	WWTANK-MSS and CARB-VNTMSS
Thermal Oxidizer (TO)	TO-Startup	Vent to Atmosphere	TO-SRTMSS
All Production Related	Painting at All Production Related Facilities	TDU Site-wide Painting and USET Site-wide Painting	TPAINT-MSS and UPAINT-MSS
See Attachment A	Miscellaneous Low Emitting Activities	See Attachment A	EQUIP-MSS
See Attachment B	Routine Unscheduled Equipment Maintenance	Routine Equipment MSS	TO-VNTMSS and EQUIP-MSS after TO control
All production-related	Abrasive Blasting	PM From Blasting Media	UBLAST-MSS and TBLAST-MSS
All production- related	Deep Well Maintenance	Wastewater Emissions from Deep Well	DWELL-MSS
All production- related	Bag House Filters	Bag House Filter Change-Outs	FLTCHG-MSS

Date: July 23, 2021

Attachment 1

Tank Service and Throughputs

Tank	Service	Fill/Withdrawal rate (gallons/hour)	Rolling 12 Month Throughput (gallons)
T3	Condensate Water Tank	3,600	7,200,000
T5	Filtrate Mix Tank	3,600	7,200,000
T6	Filtrate (oil/water separator)	3,600	10,000,000
T6A	Filtrate Skim Tank	1,500	100,000
T10	Reclaimed Storage	2,400	529,356
T11	Reclaimed Storage	2,400	529,356
T12	Reclaimed Storage	2,400	529,356
T13	Reclaimed Storage	2,400	529,356
T16	Reclaimed Storage	15,000	7,200,000
T17	Reclaimed Storage	15,000	7,200,000
T30	Feed Prep Mix Tank (Shaker Tank)	15,000	7,133,899
T31	Feed Prep Mix Tank	15,000	2,000,000
T32	Feed Prep Mix Tank	15,000	2,000,000
T33	Feed Prep Mix Tank	15,000	2,000,000
T34	Wastewater	3,600	5,000,000
T35	Feed Prep Mix Tank	15,000	2,000,000
T36	Feed Prep Mix Tank	15,000	2,000,000
M3	Wastewater	3,600	5,700,049
M6	Wastewater	3,600	5,700,049
S1	Wastewater	3,600	4,700,637
S2	Wastewater	3,600	4,700,637
T37	Reclaimed/Distillation Storage	600	6,319,314
T40	Reclaimed/Distillation Storage	600	6,319,314
T41	Reclaimed/Distillation Storage	600	6,319,314
T42	Reclaimed/Distillation Storage	600	6,319,314
T43	Reclaimed/Distillation Storage	600	6,319,314
WT1	Reclaimed/Distillation Storage	600	6,319,314
WT2	Wastewater	600	6,319,314

Emission Sources - Maximum Allowable Emission Rates

Permit Number 90163

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)
1	TDU Dryer (32 MMBtu/hr Natural Gas fired)	PM	0.24	1.04
		PM ₁₀	0.24	1.04
		PM _{2.5}	0.24	1.04
		SO ₂	0.02	0.08
		NO _x	3.14	13.74
		CO	2.64	11.54
		VOC	0.17	0.76
		HAP	0.06	0.26
7	TDU Steam Boiler (8 MMBtu/hr Natural Gas fired)	PM	0.06	0.26
		PM ₁₀	0.06	0.26
		PM _{2.5}	0.06	0.26
		SO ₂	<0.01	0.02
		NO _x	0.78	3.44
		CO	0.66	2.89
		VOC	0.04	0.19
		HAP	0.01	0.06
8A	TDU Conveyor	PM	<0.01	0.01
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		HAP	<0.01	<0.01
8B	TDU Transfer Points (Desorbed Solids Bin)	PM	0.03	0.06
		PM ₁₀	0.02	0.03
		PM _{2.5}	<0.01	<0.01
		HAP	<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)
CKD-T1	Truck CKD Offloading - Drop Point	PM	0.01	0.09
		PM ₁₀	<0.01	0.04
		PM _{2.5}	<0.01	<0.01
CKD-T2	Transfer Outdoor CKD to Partially Enclosed CKD Stockpile - Drop Point	PM	<0.01	0.04
		PM ₁₀	<0.01	0.02
		PM _{2.5}	<0.01	<0.01
TM-T1	Truck Clay Offloading - Drop Point	PM	0.08	0.35
		PM ₁₀	0.04	0.17
		PM _{2.5}	<0.01	0.03

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
BH/Venturi	TDU Cooling Baghouse/Venturi Scrubber	PM	0.09	0.38
		PM ₁₀	0.09	0.38
		PM _{2.5}	0.09	0.38
		VOC	0.20	0.37
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	<0.01	<0.01
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
		H ₂ S	<0.01	<0.01
		HAP	0.20	0.37 (8)
		HF	<0.01	
		HCl	<0.01	
CT	TDU Cooling Tower	PM	0.10	0.44
		PM ₁₀	0.05	0.22
		PM _{2.5}	<0.01	<0.01
		VOC	0.06 (5)	0.25 (5)
		H ₂ S	<0.01	0.03
		HF	<0.01	0.04
		HCl	0.06	0.24
		NH ₃	0.06	0.25
		HNO ₃	0.05	0.22
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	0.04	0.17
		H ₂ SO ₄	<0.01	<0.01
		BOX-1	TDU Centrifuge Cake Rolloff 1	VOC
HAP	1.99			0.02 (8)

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		HF	<0.01	
		HCl	0.03	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.15	0.06
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
BOX-1B	TDU Centrifuge Cake Rolloff 1B	VOC	5.57	0.83
		HAP	1.99	0.02 (8)
		HF	<0.01	
		HCl	0.03	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.15	0.06
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
BOX-1C	TDU Centrifuge Cake Rolloff 1C	VOC	5.57	0.83
		HAP	1.99	0.02 (8)
		HF	<0.01	
		HCl	0.03	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.15	0.06
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<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)
		H ₂ O ₂	<0.01	<0.01
BOX-2	TDU Gas Treatment Cake Box	VOC	0.17	0.20
		HAP	0.06	<0.01 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	<0.01	0.02
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
SHAKER	TDU Shaker Box	VOC	0.22	0.07
		HAP	0.08	<0.01 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	<0.01	<0.01
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
DUTOTE	Tote Tank	VOC	<0.01	<0.01
		HAP	<0.01	<0.01 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<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)
		NH ₃	<0.01	<0.01
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<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)
BIN-FUG	Feed Bin Fugitives (5)	VOC	6.71	4.28
		HAP	2.40	0.09 (8)
		HF	<0.01	
		HCl	0.03	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.18	0.33
		HNO ₃	<0.01	0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	0.02
FXBIN-FUG	Fixed Bin Fugitives	VOC	4.58	3.07
		HAP	1.64	0.06 (8)
		HF	<0.01	
		HCl	0.02	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.13	0.24
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	0.01
CARBFLT1	Carbon Adsorption System 1	VOC	<0.01	0.07
		HAP	<0.01	0.07 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	<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)
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
CARBFLT2	Carbon Adsorption System 2	VOC	<0.01	0.06
		HAP	<0.01	0.06 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	<0.01	<0.01
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
CARBFLT3	Carbon Adsorption System 3	VOC	7.02	0.13
		HAP	7.02	0.13 (8)
		HF	<0.01	
		HCl	3.23	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.33	<0.01
		HNO ₃	0.44	0.16
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
FUG-TDU	TDU Piping Fugitives (5)	VOC	0.16	0.70
		HAP	0.03	0.14 (8)
		HF	<0.01	
		HCl	<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)
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.02	0.42
		HNO ₃	<0.01	0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	0.17
FUG-DU	DU Piping Fugitives (5)	VOC	0.06	0.25
		HAP	0.02	0.09 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	<0.01	0.15
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	0.06
PROD-LOAD	Reclaimed Oil Product Loadout	VOC	0.36	0.06
		HAP	0.36	0.06 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.05	0.03
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	0.02	0.01
PROD-LOAD2		VOC	1.56	0.57

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
	Distillate Product Loadout	HAP	<0.01	<0.01
FUG-2	Cement Kiln Dust Stock Pile	PM	0.02	0.09
		PM ₁₀	0.01	0.05
		PM _{2.5}	<0.01	<0.01
FUG-1	Stabilization Building 2 Process Fugitives (5)	PM	0.04	0.21
		PM ₁₀	0.04	0.21
		PM _{2.5}	<0.01	<0.01
		VOC	2.46	(6)
		HAP	2.46	(7) (8)
		HF	<0.01	
		HCl	0.21	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.18	0.14
		HNO ₃	0.14	0.05
		H ₃ PO ₄	<0.01	<0.01
H ₂ O ₂	<0.01	<0.01		
BH1	Stabilization Building 2 Baghouse	PM	2.14	4.50
		PM ₁₀	2.14	4.50
		PM _{2.5}	2.14	4.50
		VOC	46.76	(6)
		HAP	46.78	(7) (8)
		HF	<0.01	
		HCl	3.98	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	3.43	2.75

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		HNO ₃	2.69	0.96
		H ₃ PO ₄	0.01	0.02
		H ₂ O ₂	0.18	0.14
BH2	Stabilization Building 3 Baghouse	PM	2.14	4.50
		PM ₁₀	2.14	4.50
		PM _{2.5}	2.14	4.50
		VOC	37.30	(6)
		HAP	37.32	(7) (8)
		HF	<0.01	
		HCl	2.22	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	2.51	2.30
		HNO ₃	2.26	0.80
		H ₃ PO ₄	<0.01	0.01
		H ₂ O ₂	0.15	0.12
BH7	Stabilization Building 3 Baghouse	PM	2.14	4.50
		PM ₁₀	2.14	4.50
		PM _{2.5}	2.14	4.50
		VOC	37.30	(6)
		HAP	37.32	(7) (8)
		HF	<0.01	
		HCl	2.22	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	2.51	2.30
		HNO ₃	2.26	0.80

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		H ₃ PO ₄	<0.01	0.01
		H ₂ O ₂	0.15	0.12
FUG-3	Stabilization Building 3 Process Fugitives (5)	PM	<0.01	0.01
		PM ₁₀	<0.01	0.01
		PM _{2.5}	<0.01	<0.01
		VOC	3.93	(6)
		HAP	3.93	(7) (8)
		HF	<0.01	
		HCl	0.23	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.26	0.24
		HNO ₃	0.24	0.08
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	0.02	0.01
FUG-1, BH1, BH2, BH7, and FUG-3	Stabilization Buildings Annual Emission Caps	VOC	--	6.13
		HAP	--	3.65 (8)
BH4	Catalyst Building Baghouse	PM	1.71	5.49
		PM ₁₀	1.71	5.49
		PM _{2.5}	1.71	5.49
		HAP	0.02	0.05
CAT-FUG1	Drum Loading Fugitives 1 (from Catalyst Building) (5)	PM	<0.01	0.01
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		HAP	<0.01	<0.01
CAT-FUG2	Drum Loading Fugitives 2 (from outside) (5)	PM	<0.01	<0.01
		PM ₁₀	<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)
		PM _{2.5}	<0.01	<0.01
		HAP	<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)
TO	Thermal Oxidizer - Routine (15 MMBtu/hr)	PM	0.11	0.49
		PM ₁₀	0.11	0.49
		PM _{2.5}	0.11	0.49
		SO ₂	16.80	38.63
		NO _x	20.63	35.34
		CO	1.24	5.41
		VOC	2.21	2.05
		HAP	0.76	0.34 (8)
		Total As (9)	3.95	
		HF	15.61	
		HCl	34.57	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	0.03	<0.01
		HBr	19.04	34.76
		Total Iodine	18.20	33.43
		NH ₃	0.18	0.66
		HNO ₃	10.63	32.42
		H ₃ PO ₄	2.80	8.77
H ₂ O ₂	0.10	0.31		
Landfill	Landfill Emissions	VOC	0.32	1.41
		HAP	0.17	0.73 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	<0.01	0.03
		HNO ₃	<0.01	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)
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	<0.01	<0.01
TDU-TP1	Receiving Bins – Drop Point	PM	<0.01	0.02
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		HAP	<0.01	0.02
TDU-TP2	Fixed Bins – Drop Point	PM	<0.01	0.02
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		HAP	<0.01	0.02
TDU-TP3	TDU Dryer – Drop Point	PM	<0.01	0.02
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		HAP	<0.01	0.02
LANDFILLTP	Landfill – Drop Point	PM	<0.01	<0.01
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		HAP	<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)		
Maintenance, Startup, and Shutdown (MSS)						
TANK-MSS	Tank MSS	VOC	3.95	0.15		
WWTANK-MSS	Wastewater Tank MSS	VOC	0.43	0.01 (8)		
		HAP	0.43			
		HF	<0.01			
				HCl	<0.01	
				H ₂ S	<0.01	<0.01
				H ₂ SO ₄	<0.01	<0.01
				NH ₃	0.31	<0.01
				HNO ₃	<0.01	<0.01
				H ₃ PO ₄	<0.01	<0.01
				H ₂ O ₂	<0.01	<0.01
CARB-VNTMSS	Carbon Vent MSS	VOC	1.89	0.03		
		HAP	1.89	0.03 (8)		
		HF	<0.01			
		HCl	0.02			
				H ₂ S	<0.01	<0.01
				H ₂ SO ₄	<0.01	<0.01
				NH ₃	0.01	<0.01
				HNO ₃	<0.01	<0.01
				H ₃ PO ₄	<0.01	<0.01
				H ₂ O ₂	<0.01	<0.01
EQUIP-MSS	Equipment Purging and Opening	PM	<0.01	<0.01		
		PM ₁₀	<0.01	<0.01		
		PM _{2.5}	<0.01	<0.01		
		VOC	3.27	0.04		
		HAP	0.44	0.01 (8)		

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.05	0.02
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	0.02	<0.01
TPAINT-MSS	TDX Sitewide Painting	PM	0.49	0.05
		PM ₁₀	0.49	0.05
		PM _{2.5}	0.49	0.05
		VOC	16.65	1.66
		HAP	0.40	0.04
UPAINT-MSS	USET Sitewide Painting	PM	<0.01	<0.01
		PM ₁₀	<0.01	<0.01
		PM _{2.5}	<0.01	<0.01
		VOC	18.77	0.19
		HAP	0.80	<0.01
TBLAST-MSS	TDX Sitewide Abrasive Blasting	PM	1.43	0.01
		PM ₁₀	0.17	<0.01
		PM _{2.5}	0.03	<0.01
UBLAST-MSS	USET Sitewide Abrasive Blasting	PM	2.86	0.01
		PM ₁₀	0.34	<0.01
		PM _{2.5}	0.05	<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)
TO-SRTMSS	Thermal Oxidizer Startup	PM	0.06	<0.01
		PM ₁₀	0.06	<0.01
		PM _{2.5}	0.06	<0.01
		SO ₂	<0.01	<0.01
		NO _x	0.45	<0.01
		CO	3.09	0.06
		VOC	0.04	<0.01
		HAP	0.01	<0.01
TO-VNTMSS	Thermal Oxidizer - MSS	VOC	0.80	<0.01
		HAP	0.80	<0.01
		HF	<0.01	
		HCl	4.04	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.04	<0.01
		HNO ₃	0.63	<0.01
		H ₃ PO ₄	0.03	<0.01
		H ₂ O ₂	<0.01	<0.01
DWELL-MSS	Frac Tank - Deepwell Maintenance	VOC	2.39	0.01
		HAP	2.39	0.01 (8)
		HF	<0.01	
		HCl	<0.01	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	0.01	<0.01
		HNO ₃	<0.01	<0.01
		H ₃ PO ₄	<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)
		H ₂ O ₂	<0.01	<0.01
FLTCHG-MSS	Baghouse Filter Changes	PM	0.17	<0.01
		PM ₁₀	0.08	<0.01
		PM _{2.5}	0.01	<0.01
		HAP	<0.01	<0.01
Washout	Washout	VOC	73.71	14.61
		HAP	28.71	2.43 (8)
		HF	0.06	
		HCl	0.12	
		H ₂ S	<0.01	<0.01
		H ₂ SO ₄	<0.01	<0.01
		NH ₃	2.03	0.77
		HNO ₃	1.53	0.16
		H ₃ PO ₄	<0.01	<0.01
		H ₂ O ₂	0.21	0.02

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
- NO_x - total oxides of nitrogen
- SO₂ - sulfur dioxide
- PM - total particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}, as represented
- PM₁₀ - total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}, as represented
- PM_{2.5} - particulate matter equal to or less than 2.5 microns in diameter
- CO - carbon monoxide
- HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
- H₂S - hydrogen sulfide (delisted HAP)
- As - arsenic (HAP)
- H₂SO₄ - sulfuric acid
- NH₃ - ammonia
- HNO₃ - nitric acid
- H₃PO₄ - phosphoric acid
- H₂O₂ - hydrogen peroxide
- HCl - hydrogen chloride (HAP)
- HF - hydrogen fluoride (HAP)
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.

Emission Sources - Maximum Allowable Emission Rates

- (5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
- (6) The annual VOC emissions from this source are included in the Stabilization Buildings Annual VOC Emission Cap of 6.13 tpy.
- (7) The annual H₂S, HF, and HCl emissions from this source are included in the Stabilization Buildings Annual HAP cap of 3.65 tpy.
- (8) Emission limit applies to the sum of total HAP emissions (including but not limited to HF and HCl).
- (9) Total Arsenic includes elemental arsenic and arsenic compounds.

Date: July 23, 2021

Tank	Service	Fill/Withdrawal rate (gallons/hour)	Rolling 12 Month Throughput (gallons)
WT3	Wastewater	600	6,319,314
WT4	Wastewater	15,000	6,319,314

Date: July 23, 2021