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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

July 27, 2009

MS JANICE A GOLDEN
ENVIRONMENTAL MANAGER
FLINT HILLS RESOURCES LP
PO BOX 2608
CORPUS CHRISTI TX 78403-2608

Re: Permit Amendment
Flexible Permit Numbers: 6308 and PSDTX137M2
East Refinery
Corpus Christi, Nueces County
Regulated Entity Number: RN102534138
Customer Reference Number: CN600879712
Account Number: NE-0120-H

Dear Ms. Golden:

This is in response to your letter received January 5, 2007 and your Form PI-1 (General Application for Air Preconstruction Permits and Amendments) concerning the proposed amendment to Flexible Permit Numbers 6308 and PSDTX137M2. We understand that you propose to authorize planned maintenance, start-up, and shutdown (MSS) activities and the associated air emissions.

As indicated in Title 30 Texas Administrative Code § 116.721(a) [30 TAC § 116.721(a)], and based on our review, Flexible Permit Numbers 6308 and PSDTX137M2 are hereby amended. This information will be incorporated into the existing permit file. Enclosed are revised special conditions pages and a maximum allowable emission rates table (MAERT) to replace those currently attached to your permit. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met.

Planned MSS for the sources identified in the permit have been reviewed and included in the MAERT and specific maintenance activities are identified in the permit special conditions. Any other maintenance activities are not authorized by this permit and will need separate authorization.

This amendment will be automatically void upon the occurrence of any of the following, as indicated in 30 TAC § 116.120(a):

1. Failure to begin construction of the changes authorized by this amendment within 18 months from the date of this authorization.

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2. Discontinuance of construction of the changes authorized by this amendment for a period of 18 consecutive months or more.
3. Failure to complete the changes authorized by this amendment within a reasonable time.

Upon request, the Texas Commission on Environmental Quality (TCEQ) Executive Director may grant extensions as allowed in 30 TAC § 116.120(b).

As of July 1, 2008, all analytical data generated by a mobile or stationary laboratory in support of compliance with air permits must be obtained from a NELAC (National Environmental Laboratory Accreditation Conference) accredited laboratory under the Texas Laboratory Accreditation Program or meet one of several exemptions. Specific information concerning which laboratories must be accredited and which are exempt may be found in 30 TAC §§ 25.4 and 25.6.

For additional information regarding the laboratory accreditation program and a list of accredited laboratories and their fields of accreditation, please see the following Web site:

http://www.tceq.state.tx.us/compliance/compliance_support/qa/env_lab_accreditation.html

For questions regarding the accreditation program, you may contact the Texas Laboratory Accreditation Program at (512) 239-3754 or by e-mail at labprgms@tceq.state.tx.us.

The limitations of 30 TAC § 116.120(a) do not apply to physical or operational changes allowed without an amendment under 30 TAC § 116.721 of this title (relating to Amendments and Alterations). [30 TAC § 116.715(c)(1)]

You may file a **motion to overturn** with the Chief Clerk. A motion to overturn is a request for the commission to review the TCEQ Executive Director's approval of the application. Any motion must explain why the commission should review the TCEQ Executive Director's action. According to 30 TAC § 50.139, an action by the TCEQ Executive Director is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the Chief Clerk within 23 days after the date of this letter. An original and 11 copies of a motion must be filed with the Chief Clerk in person or by mail. The Chief Clerk's mailing address is Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. On the same day the motion is transmitted to the Chief Clerk, please provide copies to Mr. Robert Martinez, Director, Environmental Law Division, MC-173, and Mr. Blas J. Coy, Jr., Public Interest Counsel, MC-103, both at the same TCEQ address above. If a motion is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

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You may also request **judicial review** of the TCEQ Executive Director's approval. According to Texas Health and Safety Code § 382.032, a person affected by the TCEQ Executive Director's approval must file a petition appealing the TCEQ Executive Director's approval in Travis County district court within 30 days after the effective date of the approval. Even if you request judicial review, you still must exhaust your administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

Your cooperation in this matter is appreciated. If you need further information or have any questions, please contact Kurt Kind, Ph.D., P.E., at (512) 239-1337 or write to the Texas Commission on Environmental Quality, Office of Permitting and Registration, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

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

Sincerely,



Steve Hagle, P.E., Acting Director
Air Permits Division
Office of Permitting and Registration
Texas Commission on Environmental Quality

SH/KKK/ssl

Enclosures

cc: Air Section Manager, Region 14 - Corpus Christi
Air Permits Section Chief, New Source Review Section (6PD-R), U.S. Environmental
Protection Agency, Region 6, Dallas

Project Number: 126715

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

EMISSION CAPS AND INDIVIDUAL EMISSION LIMITATIONS

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emissions Sources, Emissions Caps and Individual Emission Limitations," and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit. (2/09)
2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the maximum allowable emission rates table (MAERT). Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.

Safety relief valves that discharge to the atmosphere only as a result of fire or failure of utilities are exempt from this special condition, provided each valve is equipped with a rupture disc upstream or downstream. A pressure gauge or 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. (1/04)

3. [reserved]
4. [reserved]
5. [reserved]
6. [reserved]

EMISSION STANDARDS

7. For purposes of estimating emissions for heaters and boilers after burner upgrades have been installed or for those heaters not being upgraded, the carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), particulate matter (PM), and VOC emissions shall be determined in accordance with the following emission factors unless a continuous emissions monitor (CEM) is required to be installed and operated under Special Condition No. 23. After the installation and calibration of the CEM, monitoring data collected therein shall be used instead of these emission factors at an individual heater.

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CO Emissions

For all heaters, except those specifically identified below, the CO emissions shall be calculated based on the annual fired duty in MMBtu per year (MMBtu/yr) and a CO emission factor of 0.05 pound (lb) CO/MMBtu (higher heating value [HHV]).

The DHT D Charge Heater, DHT I Charge Heater, DHT I Fractionator Heater, DHT K Charge Heater, Clay Tower Heater, SRU SCOT Heater, and ISOM Splitter Reboiler CO emissions shall be calculated based on the annual fuel gas usage and a CO emission factor of 84 lb CO of million standard cubic feet (MMscf) of fuel gas. (6/09)

NO_x Emissions

The NO_x emissions shall be calculated based on the annual fired duty in MMBtu/yr and the NO_x emission factor as identified below:

0.152 lb NO_x/MMBtu (HHV) SRU No. 1 SCOT Heater;

0.075 lb NO_x/MMBtu (HHV) Crude II Charge Heater A, Hydrobon Charge Heater, DIH B Heater, Hydrobon Reboiler (Hourly);

0.05 lb NO_x/MMBtu (HHV) DHT I Fractionator Heater;

0.06 lb NO_x/MMBtu (HHV) DHT I Charge Heater;

0.055 lb NO_x/MMBtu (HHV) FCCU II Charge Heater and Hydrobon Reboiler(Annual);

0.045 lb NO_x/MMBtu (HHV) BTX Rx No. 1 Heater, BTX Rx No. 2 Heater, and BTX Depentanizer Reboiler, DHT K Charge Heater; and

0.04 lb NO_x/MMBtu (HHV) Isom Splitter Reboiler.

The Sulfolane Clay Tower Heater NO_x emissions shall be calculated based on the annual fuel gas usage and a NO_x emissions factor of 140 lb NO_x/MMscf of fuel gas.

The DHT-D Charge Heater NO_x emissions shall be calculated based on the annual fuel gas usage and a NO_x emission factor of 100 lbs NO_x/MMscf of fuel gas. (6/09)

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SO₂ Emissions

The SO₂ emissions shall be calculated on the annual fuel gas usage and the measured hydrogen sulfide (H₂S) concentration in the fuel gas as determined by Special Condition No. 33 and assuming 100 percent conversion of H₂S to SO₂.

PM Emissions

The PM emissions for all heaters shall be calculated based on the annual fuel gas usage and the PM emission factor of 7.6 lb PM/MMscf fuel gas. (6/09)

VOC Emissions

The VOC emissions for all heaters shall be calculated based on the annual fuel gas usage and the VOC emission factor of 5.5 lb VOC/MMscf fuel gas. (6/09)

8. For purposes of estimating emissions, the CO, NO_x, SO₂, PM, and VOC emissions for the FCCU II Catalyst Regenerator Scrubber shall be determined in accordance with the following emission factors unless a CEM is required to be installed and operated under Special Condition No. 23. After the installation and calibration of the CEM, monitoring data collected therein shall be used instead of these emission factors:

NO_x - 200 parts per million by volume on a dry basis (ppmvd), air-free basis annual average, 500 ppmvd, air-free basis hourly average

CO - 125 ppmvd annual average, 500 ppmvd, hourly average

SO₂ - 25 ppmvd, air-free basis 365-day rolling average; 50 ppmvd, air-free basis seven-day rolling average; 250 ppmvd, air-free basis hourly average

VOC - 10 ppmvd, air-free basis annual average, 100 ppmvd, air-free basis hourly average

PM - 1 lb PM per 1,000 lb coke burn-off (8/02)

9. The NO_x emissions in the stack gases from the following EPNs shall not exceed the following, averaged on a three-hour rolling average basis at the maximum fired capacity:

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<u>EPN</u>	<u>Description</u>	<u>Maximum Heat Specific (lb/MMBtu, HHV)</u>
35, 36	BTX Rx No. 1 Heater	0.045
37, 38	BTX Rx No. 2 Heater	0.045
33, 34	BTX Depentanizer Reboiler	0.045
120	Isom Splitter Reboiler	0.040
74R	DHT-K Replacement Charge Heater	0.045

The NO_x limit of each heater above shall not apply when that heater fires below 20 percent of its firing rate capacity (low load), so long as NO_x emissions remain below the NO_x cap limits. Low load operating conditions shall be limited to 876 hours per year per heater. (2/09)

10. The opacity of emissions from any source on this permit shall not exceed 15 percent averaged over a six-minute period. Opacity shall be determined by EPA Reference Method 9. (1/01)
11. Flare and/or marine vapor combustor emissions shall be calculated using the Texas Commission on Environmental Quality (TCEQ)-approved flare factors for NO_x and CO emissions according to the following table. Do not use AP-42 factors.

<u>Type Flare</u>	<u>Waste Gas Heating Value</u>	<u>Emission Factor</u>	
		<u>NO_x (lbs/MMBtu)</u>	<u>CO (lbs/MMBtu)</u>
Steam	Hi Btu (>1,000 Btu/scf)	0.0485	0.3503
Steam	Low Btu (192-1,000 Btu/scf)	0.068	0.3465
Air/Unassisted	High Btu	0.138	0.2755
Air/Unassisted	Low Btu	0.0641	0.5496

For VOC, use 98 percent (99 percent for C2s and C3s) control.

12. The West Flare (EPN FL-28) may be used as a backup for the Main Flare (EPN FL-97). The East Flare (EPN FL-27) may be used as a backup for the West Flare and the Main Flare. (1/04)
13. Flares shall be designed and operated in accordance with the following requirements:
 - A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and maintenance flow conditions.

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Flexible Permit Numbers 6308 and PSDTX137M2

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The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate TCEQ Regional Office (or is required per New Source Performance Standards [NSPS] Subpart) to demonstrate compliance with these requirements.

- B. Flares shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications
- C. Flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.
- D. If a planned process unit start-up or shutdown emissions have the potential to be routed to the flare system rather than, or in addition to, the flare gas recovery system, the permit holder shall determine the volume of assist gas that will be necessary to add to ensure the waste gas heating value specified in part A of this condition is met at all times during the evolution. Records of the detailed calculations shall be maintained including the volume of the process unit, the time the inert purge was commenced and the volumetric flow rate, the time and rate at which assist gas was added to the waste gas stream, and when flaring was complete.

A waste gas sample shall be taken every two hours when planned maintenance, start-up, and shutdown (MSS) emissions are routed to the flare system. Samples shall be analyzed in accordance with FHR Analytical Method 0024 to determine total volatile organic compound concentration (VOC) and other potential constituents (e.g., hydrogen, hydrogen sulfide, nitrogen, methane, and carbon dioxide) sufficient to determine the molecular weight and net heating value of the gas combusted in the flare to within 5.0 percent. The results shall be used to demonstrate compliance with the Special Condition No. 14A and the MAERT. (7/09)

SULFUR RECOVERY UNITS (SRU)

- 14. The total sulfur recovered from the SRU No. 1 and No. 2 combined shall not exceed 116 long tons per day based on a seven-day rolling average. (8/02)

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15. The minimum sulfur recovery efficiency for SRU No. 1 shall be 99.82 percent and for SRU No. 2 shall be 99.8 percent based on a seven-day rolling average. The sulfur recovery efficiency shall be determined by calculation as follows:

$$\text{Efficiency} = \frac{(\text{S recovered})(100)}{(\text{S recovered}) + (\text{S incinerator})}$$

Where: Efficiency = sulfur recovery efficiency, percent
S recovered = elemental sulfur delivered into pit, lbs per week (lbs/wk)
S incinerator = sulfur in incinerator stack, lbs/wk

The average sulfur recovery efficiency shall be demonstrated by a mass balance calculation using data obtained from the incinerator stack SO₂ monitor, sulfur production records, and other process flow data. Records and copies of the compliance calculations shall be maintained on-site for review by TCEQ personnel. (8/02)

16. All tail gas from the SRU shall be routed to the SCOT Tail Gas Treating Unit (TGTU). (7/09)
17. The CO emission rates listed on the MAERT for the tail gas incinerator (TGI) Stack, EPN S-84, are based upon a maximum CO concentration of 100 parts per million by volume (ppmv) in the TGI exhaust gas. (8/02)
18. Vapors from sulfur truck loading shall be routed either back to the sulfur pit, back to the SRU front-end, or to the TGI. Sulfur pit vapors shall be routed to either the SRU front-end or to the TGI except during during periods of sulfur pit or eductor maintenance. (1/09)
19. The TGI firebox exit temperature shall be continuously monitored and recorded. The minimum hourly average TGI firebox chamber temperature shall be 1000°F during normal operating conditions. The monitoring data must consist of a minimum of four equally-spaced data points for each one-hour period. Up to 5 percent invalid monitoring data on a rolling 12-month basis is acceptable provided it is only generated when the monitor is broken down, out-of-control (producing inaccurate data), being repaired, having maintenance performed, or being calibrated. The data availability shall be calculated as the total SRU TGI operating minutes for which quality-assured data was recorded divided by the total SRU TGI operating minutes. The measurements missed shall be estimated using engineering judgment and the methods used recorded. (2/09)
20. Sulfur load shedding plans shall be reviewed quarterly and updated as necessary to ensure that potential unauthorized sulfur compound emissions are minimized if an upset or unplanned MSS should occur. Emissions associated with such events are not authorized by this permit. (1/09)

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INITIAL STACK TESTING

21. The holder of this permit shall perform initial stack sampling and other stack testing as required within 60 days after achieving the maximum production rate at which the new or modified facility will be operated but no later than 180 days after initial start-up of the new or modified facilities.

A. Initial stack sampling shall be required for the following facilities:

- (1) FCCU II Catalyst Regenerator Scrubber.
- (2) Crude II Charge Heater A, BTX Rx Nos. 1 and 2 Heaters, FCCU II Charge Heater, Hydrobon Charge Heater or Reboiler, BTX Depent Heater, Isom Splitter Reboiler, and DIH Heater B. (6/09)
- (3) TGI Stack from SRU No. 1 (EPN S-84) and TGI Stack from SRU No. 2 (EPN S-85). (8/02)
- (4) DHT-K Replacement Charge Heater (EPN DHT-K). (9/04)

The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

B. The appropriate TCEQ Regional Office in the region where the source is located shall be contacted as soon as testing is scheduled but not less than 30 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

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

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

Requests to waive testing for any pollutant specified in B of this condition shall be submitted to the TCEQ Office of Permitting and Registration, Air Permits Division. Test waivers and alternate and/or equivalent procedure proposals for NSPS testing which must have the EPA approval shall be submitted to the TCEQ Regional Director.

- C. Air contaminants emitted from the FCCU Catalyst Regenerator Scrubber to be tested for include (but are not limited to) CO, NO_x, PM, SO₂, and VOC. Opacity shall be determined by a trained observer.

Air contaminants emitted from the various process heaters and boilers to be tested for include (but are not limited to) CO and NO_x.

Air contaminants emitted from the TGI Exhaust Stacks (EPNs S-84 and S-85) to be tested for include (but are not limited to) SO₂ and CO.

- D. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval, and requests shall be submitted to the TCEQ Compliance Support Division in Austin.
- E. The facility shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the facility is unable to operate at maximum rates during testing, then future production rates may be limited to the rates established during testing. Additional stack testing may be required when higher production rates are achieved.
- F. A copy of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the TCEQ Corpus Christi Regional Office. (2/02)

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- G. For the following symmetrical heaters having two stacks (Hydrobon Charge Heater and Reboiler, BTX Rx Nos. 1 and 2, BTX Depentanizer Heater, and DIH Heaters B):
- (1) It is permissible to sample one stack for pollutants and measure only the exhaust flow from the second identical stack. Concentrations from the sampling shall be used in combination with the measured flow rate for calculation of emission rates.
 - (2) If the measured exhaust flow varies between two symmetrical stacks by greater than 10 percent, both stacks will be required to be sampled one after another with no greater than 48 hours between the first stack sampling and the second. (1/09)
22. Additional stack testing may be required when higher production rates are achieved, except where the source is equipped with a CEMS that analyzes the applicable pollutants described in Special Condition No. 23C. (2/09)

CONTINUOUS DEMONSTRATION OF COMPLIANCE

23. The holder of this permit shall install, calibrate, maintain a CEM, and record the in-stack concentrations of the contaminants as specified below:

BTX Rx Nos. 1 and 2 Heaters, Crude II Charge Heater A: NO_x, CO, and oxygen (O₂)

FCCU II Catalyst Regenerator Scrubber: NO_x, CO, SO₂, and O₂

TGI Exhaust Stacks, EPNs S-84 and S-85: O₂ and SO₂

The monitoring systems shall meet the following requirements:

- A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Permitting and Registration, Air Permits Division for requirements to be met.
- B. Section 1 below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; Section 2 applies to all other sources:

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- (1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager in the periodic CEMS reports, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager. Downtime is not considered to include periods when the CEMS is operational but the 24-hour span drift exceeds the allowable amounts.
- (2) The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span are not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days, unless the monitor is required by a subpart of NSPS or NESHAPS in which case zero and span shall be done daily without exception.

Each monitor shall be quality-assured at least quarterly using cylinder gas audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.2, with the following exception: a RATA is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of ± 15 percent accuracy indicate that the CEMS is out of control.

- C. The monitoring data shall be reduced to hourly average concentrations at least weekly, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable ER in pounds per hour (lb/hr) at least once every calendar quarter (except for O₂).
- D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required initial RATA in order to provide them the opportunity to observe the testing.

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- F. Quality-assured (or valid) data must be generated by the CEMS when the source it monitors is operating except during the performance of a daily zero and span check. Loss of valid data by the CEMS 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 source it monitors is operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager. (2/09)
24. The holder of this permit shall continuously monitor and record the actual throat velocity of the FCCU II wet gas scrubber. The wet gas scrubber shall be operated such that a throat velocity ratio (TVR), as calculated below, of greater than or equal to 1.0 but less than 2.0 is maintained. Records of actual throat velocity and TVR shall be kept at the plant site on a rolling two-year basis and shall be made available upon request.

$$\text{TVR} = \frac{\text{Actual Throat Velocity, fps}}{\text{Minimum Design Throat Velocity, fps}}$$

Up to 5 percent invalid monitoring data on a rolling 12-month basis is acceptable provided it is only generated when the monitor is broken down, out-of-control (producing inaccurate data), being repaired, having maintenance performed, or being calibrated. The data availability shall be calculated as the total operating minutes for which quality-assured data was recorded divided by the total operating minutes. The measurements missed shall be estimated using engineering judgment and the methods used recorded. (2/09)

PIPING, VALVES, CONNECTORS, PUMPS, AGITATORS, AND COMPRESSORS IN VOC SERVICE - 28 VHP

25. Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment.
- A. These conditions shall not apply (1) where the VOC have an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

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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 ANSI, API, 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 and maintenance, both valves shall be closed. The sealing device may be removed only while a sample is being taken or during maintenance operations, and when closing the line, the upstream valve shall be closed first.

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

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

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

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

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

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- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained.
- I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC § 115.782(c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC § 115.782(c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.
- J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95 percent of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.
- K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 - 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

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- L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable NSPS, or an applicable NESHAPS and does not constitute approval of alternative standards for these regulations. (6/09)
- 26. The requirements to identify the exempted components using a piping and instrumentation diagram (PID), as listed in Special Condition No. 25A, and monitor and repair agitator seals, as listed in Special Condition No. 25H and 25G, are deferred until July 1, 2012. (7/09)
- 27. Instead of the leak definition of 2,000 ppmv specified in Special Condition No. 25I for pump and compressor seals in the Hydrobon Unit, the Isomerization Unit, and the MTBE Unit, the permit holder shall use a leak definition of 500 ppmv. (8/02)
- 28. Piping, Valves, Connectors, Pumps and Compressors in H₂S Service (SRU Nos. 1 and 2, and Sour Water Stripper)
 - A. Audio, olfactory, and visual checks for H₂S leaks within the operating area shall be made once per shift.
 - B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take the following actions:
 - (1) Isolate the leak.
 - (2) Commence repair or replacement of the leaking component.
 - (3) Use a leak collection and containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.

Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. (2/09)

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STORAGE AND LOADING OF VOC

29. Storage tanks are subject to the following requirements. The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.
- A. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.
 - B. An open top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.
 - C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.
 - D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.
 - E. Except for logos, slogans, identification numbers and similar displays (not to exceed 15 percent of the vertical tank shell area), uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.

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- F. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-month period. The record shall include tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year to date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions for tanks shall be calculated using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

- G. The permit holder shall maintain a record of tank throughput for the previous month and the past consecutive 12-month period for each tank.
30. A. The storage of benzene, toluene, and xylene is limited to the following tanks unless additional storage is authorized by a permit amendment, alteration, or permit by rule pursuant to 30 TAC § 116.721, except as stated in section B of this condition: **(6/09)**

Benzene - Storage Tanks E11TKR5, E11TKR7, and E12TK145
Toluene - Storage Tanks E11TKS21, E11TKS23, E11TKR17, and E11TKR18
Xylene - Storage Tanks E11TKS32, E11TKR9, and E11TKR21

- B. Toluene may be stored in an alternate storage tank provided the following conditions are met:
- (1) The replacement tank is not closer to the nearest resident.
 - (2) The hourly and total emission cap for toluene is not exceeded.
 - (3) An alteration request shall be submitted within 30 days of the change of service to identify the replacement tank and alter the permit conditions to reflect this change.

OPERATING PARAMETERS AND CONDITIONS

31. [reserved]

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32. The VOC associated with cooling tower water shall be monitored monthly with a portable organic vapor analyzer and/or approved air stripping system or equivalent. The appropriate equipment shall be maintained so as to minimize fugitive VOC emissions from the cooling tower. 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. The cooling tower water flow rate shall be recorded on an accumulated monthly and annual basis. Records shall also be kept of monitoring and repair data.
33. Fuel used in the process heaters shall be limited to either natural gas, plant gas, or a combination of natural gas and plant gas. The H₂S concentration shall be monitored and recorded in accordance with NSPS Subpart J. (2/02)
34. The East FCCU modifications represented in the alteration application dated March 25, 2008 were determined not to be subject to major new source review by identifying projected actual emission rates for the facilities potentially affected by the project. Upon completion of the modifications, actual emissions from the East FCCU shall be monitored, recorded, and reports made in accordance with 30 TAC § 116.121 for the time period specified in 30 TAC § 116.121 (b)(1). (2/09)
35. [reserved]

RECORDKEEPING

36. The following records shall be kept quarterly for the purposes of demonstration of compliance with the emission cap. Compliance with the MSS emission caps shall be demonstrated monthly as identified in Special Condition 41.
 - A. Hourly and daily fuel usage records for all heaters authorized by this permit.
 - B. The CEM data collected as required by Special Condition No. 23.
 - C. Hourly and daily cooling tower circulation rates.
 - D. All emissions calculated to determine compliance with an emission cap shall be calculated quarterly as described below to provide an accumulated total annual emission for comparison with the established annual emission caps.

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For the purposes of demonstration of compliance with the annual emission cap, all FCCU II Regenerator Scrubber, heater, marine vapor combustor, cooling tower, and tank emissions must be calculated quarterly and the monthly emissions and 12-month rolling annual total must be recorded.

The average fuel usage shall be used to calculate quarterly the average monthly firing rate and emission rate for the heaters authorized under this permit.

The emissions from the cooling towers shall be calculated based on the average monthly circulation rate.

The emissions from all IFR tanks, all EFR tanks, and all fixed-roof tanks shall be calculated based on the records identified in Special Condition No. 29G. As an alternative to calculating emissions from tanks storing materials with a true vapor pressure less than 0.5 psia or with a capacity less than 25,000 gallons, the flexible permit emission rate cap contribution from the January 26, 1998 and January 12, 1999 submittals may be used as the estimated actual emissions.

Fixed VOC sources (process fugitives) shall be added directly into the calculated monthly VOC emissions.

- E. The accumulated total annual emissions for each pollutant must be less than its respective permitted annual emission cap. The annual emission caps shall be adjusted if any facilities covered by the flexible permit have been shut down for more than 12 months. The emission caps shall be lowered by an amount that the shutdown facility contributed to the original calculation of the emission cap including any insignificant emission factor for that cap.
- F. After calculating emissions as required under paragraph D, if the accumulated total annual emissions exceed the established annual emission caps, a report shall be submitted to the TCEQ Regional Office within 30 days of performing the emission cap calculations that show the exceedance.

The report shall identify which emission caps were exceeded, cause of the exceedance (if known), and corrective action that will be taken.

- G. In order to be consistent with the 12-month rolling basis, any changes in the emissions rates caps shall be phased in on a prorated basis using the emissions rate caps before and after the change and the number of months that the plant has operated under each level of the emissions rate cap.

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- H. Demonstration with the hourly emission cap shall be made upon request of representatives of the TCEQ or any local program having jurisdiction. The hourly emission caps shall be adjusted if any facilities covered by the flexible permit have been shut down for more than 12 months. The emission caps shall be lowered by an amount that the shutdown facility contributed to the original calculation of the emission cap including any insignificant emission factor for that cap. (7/09)
37. The holder of this permit shall make and maintain records of the following:
- A. Hours that the SRU, TGTU, or TGI are inoperable or in the event of an excursion, what corrective action is taken.
 - B. Weekly sulfur production.
 - C. Hourly average TGI firebox exit temperatures.
38. The following requirements apply to capture systems for FCCU Scrubber (EPN 111), WWTP VCU (EPN FL 125), and Marine VRU (EPN FL 118).
- A. If used for particulate control, complete either of the following once a year
 - (1) Inspect any fan and verify proper operation and inspect the capture system to verify there are no cracks, holes, tears, and other defects once a year; or
 - (2) Verify there are no fugitive emissions escaping from the capture system by performing a visible emissions observation for a period of at least six minutes in accordance with 40 CFR Part 60, Appendix A, Test Method 22.
 - B. If used to control pollutants other than particulate, either:
 - (1) Conduct a once a month visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or
 - (2) Once a year, verify the capture system is leak free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

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- C. If there is a bypass for the control device Marine VRU (EPN FL 118) and/or WWTP VCU (EPN FL 125), comply with either of the following requirements :
 - (1) Install a flow indicator that records and verifies zero flow at least once every 15 minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or
 - (2) Once a month, inspect the valves, verifying the position of the valves and the condition of the car seals prevent flow out the bypass.
 - D. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. (6/09)
39. The marine VRU (EPN FL 118) shall be operated with no visible emissions and have a constant pilot flame during all times waste gas is directed to it. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor when products that require control are loaded. The time, date, and duration of any loss of pilot flame shall be recorded when products that require control are loaded. Each monitoring device shall be accurate to, and shall be calibrated at, a frequency in accordance with the manufacturer's specifications.
- A. The exhaust temperature shall be monitored and recorded at least once a day when waste gas is directed to the marine VRU.
 - B. The exhaust temperature shall be monitored continuously when waste gas is directed to it. The temperature measurement device shall reduce the temperature readings to an averaging period of six minutes or less and record it at that frequency.
 - C. The temperature monitor shall be installed, calibrated at least annually, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of 2 percent of the temperature being measured expressed in degrees Celsius or 2.5°C.
 - D. The average exhaust temperature over the loading period shall be maintained above 1100°F when products that require control are loaded.
 - E. Quality-assured (or valid) data must be generated when the marine VRU is operating except during the performance of periodic validation checks. Loss of valid data due to periods of monitor break down, out of control operation (producing inaccurate

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data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the vapor combustor operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (6/09)

MSS CONDITIONS

40. Planned start-up and shutdown emissions due to the activities identified in Special Condition No. 41 are authorized from facilities and emission points in the non-MSS emission caps and individual emission rate limits in this flexible permit provided the facility and emissions are compliant with the respective "Emission Sources, Emissions Caps and Individual Emission Limitations" emission cap contributions and special conditions of this permit.

Planned start-up and shutdown emissions due to the activities identified in Special Condition No. 41 are authorized from East Boiler No. A (EPNs 95 and F-FGS Boiler in Permit Number 2495) provided the facility and emissions are compliant with the respective MAERT and special conditions or Special Condition No. 51 of this permit. (7/09)

41. This permit authorizes the emissions from the facilities authorized by this permit for the planned MSS activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

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 abrasive blasting, portable control devices identified in Special Condition No. 52, 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 authorized by this permit, and (c) does not operate as a replacement for an existing authorized facility.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the refinery. 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.

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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 physical location at which emissions from the MSS activity occurred, including the emission point number and common name for the point at which the emissions were released into the atmosphere;
- 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 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. (7/09)

42. Process units and facilities, with the exception of those identified in Special Condition Nos. 45, 46, 48, and Attachment A shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.
 - A. The process equipment shall be depressurized to a control device or a controlled recovery system prior to venting to atmosphere, degassing, or draining liquid. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to atmosphere and drained in accordance with paragraph C of this special condition. The vapor pressure at 95°F may be used if the actual temperature of the liquid is verified to be less than 95°F and the temperature is recorded.

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- 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 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. After draining is complete, empty open pans may remain in use for housekeeping reasons to collect incidental drips.
- 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 following requirements do not apply to fugitive components, pumps, and compressors.

- (1) For MSS activities identified in Attachment B, the following option may be used in lieu of ii below. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, 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. The PFD's or P&ID's 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. Documented refinery

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procedures used to deinventory 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. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 43. The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL.

- E. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:
- (1) It is not technically practicable to depressurize or degas, as applicable, into the process.
 - (2) There is not an available connection to a plant control system (flare).
 - (3) There is no more than 50 lbs of air contaminant to be vented to atmosphere during shutdown or start-up, as applicable.

Except when identified for an activity on Attachment A, all instances of venting directly to atmosphere per Special Condition No. 42E 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, shift log, or equivalent for those planned MSS activities identified in Attachment B. (7/09)

43. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.
- A. The VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR Part 60, Appendix A) with the following exceptions:
- (1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate response factor shall be recorded.

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- (2) Sampling shall be performed as directed by this permit in lieu of Section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least five minutes and the highest concentration recorded. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.
 - (3) If a TVA-1000 series FID analyzer calibrated with methane is used to determine the VOC concentration, a measured concentration of 34,000 ppmv may be considered equivalent to 10,000 ppmv as VOC.
- B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.
- (1) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in iii., the concentration measured is at least 20 percent of the maximum range of the tube.
 - (2) The tube is used in accordance with the manufacturer's guidelines.
 - (3) At least two samples taken at least five minutes apart must satisfy the following prior to uncontrolled venting:

measured contaminant concentration (ppmv) < release concentration.
- Where the release concentration is:
- 10,000*mole fraction of the total air contaminants present that can be detected by the tube.
- The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.
- Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.
- C. Lower explosive limit measured with a lower explosive limit detector.

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- (1) The detector shall be calibrated monthly with a certified pentane gas standard at 25 percent of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
 - (2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.
 - (3) A certified methane gas standard equivalent to 25 percent of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for pentane. (7/09)
44. If the removal of a component for repair or replacement results in an open ended line or valve, the open ended line is exempt from any NSR permit condition requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;
- A. A cap, blind flange, plug, or second valve must be installed on the line or valve, or demonstrate that the line, valve, component, etc, has been double blocked from the process; or
 - B. The permit holder shall verify that there is no leakage from the open-ended line or valve. The open-ended line or valve shall be monitored on a weekly basis in accordance with the applicable NSR permit condition for fugitive emission monitoring except that a leak is defined as any VOC reading greater than background. Leaks must be repaired no later than one calendar day after the leak is detected or a cap, blind flange, plug, or second valve must be installed on the line or valve. The results of this weekly check and any corrective actions taken shall be recorded. (7/09)
45. This permit authorizes emissions for the storage tanks identified in the attached facility list during planned floating roof landings. Unless the tank vapor space is routed to a control device meeting the requirements of Special Condition No. 52, tank roofs may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the "Emission Sources, Emissions Caps, and Individual Emission Limitations Table." The following requirements apply to tank roof landings.

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- A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to three hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control or a controlled recovery system during this process.

This requirement does not apply if the level is lowered to allow for maintenance that is expected to be completed in less than 24 hours. In that case, the tank must be filled and the roof floated within 24 hours of landing the roof and the evolution documented in accordance with Special Condition No. 45E.

- B. If the VOC partial pressure of the liquid previously stored in the tank is greater than 0.50 psi at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC partial pressure of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:
- (1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.
 - (2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design until the VOC concentration is less than 10,000 ppmv or 10 percent of the LEL.

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- (3) A volume of gas equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of the gas volume shall not include any make-up air introduced into the control device or recovery system. Documented refinery 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. The VOC sampling and analysis shall be performed as specified in Special Condition No. 43.
- (4) 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.
- (5) If ventilation is to be maintained with emission control, the control device shall be monitored in accordance with Special Condition No. 52.

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

- C. The tank shall not be opened except as necessary to set up for degassing and cleaning, or ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. These criteria may 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 or other liquid is added or sprayed into the tank to remove standing VOC, acceptable vapor pressure may be demonstrated using any of the three methods below:

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- 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 Part 435 Subpart A, Appendix I.
- b. Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1,000 ppmw using EPA Method 1664 (may also use 8260B or 5030 with 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.

- (3) No standing liquid verified through visual inspection.

Once the VOC partial pressure is verified less than 0.02 psia, any subsequent/additional water flushes that may be performed do not trigger additional verification. The permit holder shall maintain records to document the method used to release the tank.

- D. Tanks shall be refilled as rapidly as practicable until the roof is off its legs with the following exceptions:
 - (1) The vapor space under the floating roof is routed to control during refilling.
 - (2) The fill rate shall not exceed 3,000 barrels per hour (bbl/hr) for any tank.
 - (3) Tank E11TKR34 shall not be filled at a rate greater than 250 bbl/hr and Tank E11TKS23 shall not refill at a rate greater than 1,000 bbl/hr.
- E. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:
 - (1) the identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;
 - (2) the reason for the tank roof landing;
 - (3) for the purpose of estimating emissions, the date, time and other information specified for each of the following events:

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- a. the roof was initially landed,
 - b. all liquid was pumped from the tank to the extent practical,
 - c. start and completion of controlled degassing, and total volumetric flow,
 - d. 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,
 - e. if there is liquid in the tank, VOC partial pressure of liquid, start and completion of uncontrolled degassing, and total volumetric flow,
 - f. refilling commenced, liquid filling the tank, and volume necessary to float the roof, and
 - g. tank roof off supporting legs, floating on liquid.
- (4) the estimated quantity of each air contaminant, or mixture of air contaminants, emitted between events c and h with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application. (7/09)
46. Fixed-roof tanks shall not be ventilated without control, until either all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. This shall be verified and documented through one of the criteria identified in Special Condition No. 45C. Fixed roof tanks manways may be opened without emission controls when there is standing liquid with a VOC partial pressure greater than 0.02 psi vapor as necessary to set up for degassing and cleaning. One manway may be opened when necessary to allow access to the tank to remove or de-volatilize the remaining liquid. The emission control system shall meet the requirements of Special Condition No. 45B(i) through 45B(v) and records maintained per Special Condition No. 45E(iii)c through 45E(iii)e and 45E(iv). Low vapor pressure liquid may be added to and removed from the tank as necessary to lower the vapor pressure of the liquid mixture remaining in the tank to less than 0.02 psia. (7/09)

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47. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site:
- 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. When the vacuum pump is operating, 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.
 - (1) Prior to initial use, identify any liquid in the truck. Record the liquid level and document that the VOC partial pressure is less 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 less 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 control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and as required by Special Condition No. 52, measured using an instrument meeting the requirements of Special Condition No. 43.
 - (4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
 - D. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each uncontrolled vacuum truck 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.

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- E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Special Condition No. 47A through 47D do not apply. (7/09)
48. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.
- A. Except for labels, logos, etc. not to exceed 15 percent of the tank/vessel total surface area, the exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. 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 six inches of the tank/vessel bottom. If the VOC partial pressure of the liquid in the tank is greater than 0.5 psi at 95°F, the tanks vents must be routed to a control device or controlled recovery system when the tank is being filled.
 - 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. (7/09)
49. The following requirements apply to tank MSS activities to ensure acceptable off-site impacts.

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- A. Tank MSS emissions activities include tank degassing, tank opening, tank refilling following a degassing/cleaning until the roof is floated, and tank refilling not following a degassing/cleaning until the roof is floated. Only one of each type of activity may occur at any time for any liquid type (crude oil, benzene, lights, and distillates) at the site. Different tank MSS emissions activities may occur concurrently.
 - B. Emissions from tanks with landed roofs being filled with product grade benzene shall be routed to a control device meeting the requirements of Special Condition No. 43.
 - C. The stack exhaust point of the control device when degassing Tank E11TKS8 shall be at least 21.5 feet above the tank base elevation. The stack exhaust point of the control device when degassing all other tanks shall be at least 16.5 feet above the tank base elevation.
 - D. Emissions from tanks with landed roofs being filled with liquids that generate hydrogen sulfide concentrations greater than 10 ppm in the landed roof headspace. (crude oil, sour water, and sour intermediates) shall be routed to a control device meeting the requirements of Special Condition No. 52.
 - E. The permit holder shall determine the potential hydrogen sulfide generated during tank refilling as reference in part D of this condition by sampling the vapors when the liquid level is at approximately half the height of the landed roof and when the liquid level is within 10 percent of the height of the landed roof. The sampling shall be performed in accordance with Special Condition No. 43B with the exception of 43B(iii). This determination shall be made at least once for each type of liquid.
(7/09)
50. The 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. (7/09)
51. All permanent facilities must comply with all operating requirements, limits, and representations during planned startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below:
- A. The combustion units, with the exception of flares, at this site are exempt from NO_x and CO operating requirements identified in special conditions and representations during planned start-up and shutdown if the following criteria are satisfied.

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- (1) The emission caps or maximum allowable emission rates in the permit authorizing the facility are not exceeded.
 - (2) The start-up period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.
 - (3) Control devices are started and operating properly when venting a waste gas stream.
- B. The limits identified below apply to the operations of the specified facilities during start-up and shutdown.
- (1) FCC start-up and refractory cure emissions shall be routed to the operating FCC scrubber and the hourly average pollutant concentrations shall be less than those identified in Special Condition No. 9. Natural gas fired burners used to preheat of the FCC may exhaust through the FCCU reactor vent.
 - (2) SRU incinerators (EPNs S-84 and S-85) shall oxidize at least 99.9 percent of the hydrogen sulfide directed to them to sulfur dioxide during the SRU start-up evolution. The minimum sulfur recovery efficiency of Special Condition No. 16 does not apply during periods of startup or shutdown
 - (3) The BTX reactors shall be depressurized and purged to the flare gas recovery system to lower the VOC partial pressure to less than 10,000 ppmv or 10 percent of the LEL prior to catalyst regeneration. The regeneration exhaust shall be routed to a caustic scrubber during carbon burn-off and oxidation.
 - (4) Decoking (EPN E23H201AMSS) shall be performed using the shot blast or pigging techniques. The PM emissions controlled by cyclones to less than 0.01 grain/scf when using the shot blast technique.
 - (5) Planned MSS shall be minimized while the flare gas recovery unit is shutdown.
- C. A record shall be maintained indicating that the start and end times each of the activities identified above occur and documentation that the requirements for each have been satisfied. (7/09)

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

A. Carbon Adsorption System (CAS).

- (1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.
- (2) The CAS shall be sampled down stream on 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 breakthrough is monitored on the initial sample of the upstream can when the polishing can is put in place, a permit deviation shall be recorded.
- (3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 43.
- (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 or prior to the next required sample, whichever is greater. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated

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carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.

- (5) Records of CAS monitoring shall include the following:
 - a. Sample time and date.
 - b. Monitoring results (ppmv).
 - c. Canister replacement log.
- (6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.
- (7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer.

- (1) The thermal oxidizer firebox exit temperature shall be maintained at not less than 1400°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.
- (2) The thermal oxidizer exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.

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 $\pm 2.5^\circ\text{C}$.

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C. Internal Combustion Engine.

- (1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.
- (2) The engine must have been stack tested with butane to confirm the required destruction efficiency within the past 12 months. The VOC shall be measured in accordance with the applicable EPA Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of Special Condition No. 43 are also acceptable for this documentation.
- (3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. The plant flare system operated per Special Condition No. 14. (7/09)

53. The following requirements apply to capture systems for the plant flare system.

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

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B. The control device shall not have a bypass.

or

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

- (1) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or
- (2) Once a month, inspect the valves, verifying the position of the valves and the condition of the car seals that prevent flow out the bypass.

These requirements do not apply to high point vent and low point drain valves. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when required to be in service per this permit.

C. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required above. (7/09)

54. No visible emissions shall leave the property due to abrasive blasting. (7/09)

55. Black Beauty, Garnet Sand, and coal slag may be used for abrasive blasting. The permit holder may also use blast media that meet the criteria below:

- 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 $ESL_{metal}/1,000$.
- C. The MSDS for each media used shall be maintained on-site.

Blasting media usage and the associated emissions shall be recorded each month and the rolling 12-month total emissions updated. (7/09)

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56. With the exception of the MAERT emission limits, these permit conditions become effective on January 1, 2010. During this period, monitoring and recordkeeping shall satisfy the requirements of Special Condition No. 41. Emissions shall be estimated using good engineering practice and methods to provide reasonably accurate representations for emissions. The basis used for determining the quantity of air contaminants to be emitted shall be recorded. (7/09)

Dated July 27, 2009

ATTACHMENT A

Flexible Permit Numbers 6308 and PSDTX137M2

Inherently Low Emitting Activities

Activity	VOC	NOx	Emissions		H ₂ S/SO ₂
			CO	PM	
water washing empty containers	x				x
combustion shut off devices	x				x
aerosol cans	x				
calibration of analytical equipment	x	x	x		x

Dated July 27, 2009

ATTACHMENT B

Flexible Permit Numbers 6308 and PSDTX137M2

Routine Maintenance Activities

Component repair/replacement that may be isolated so that the process volume to be emptied and degassed is less than 10 cubic feet.

Dated July 27, 2009

ATTACHMENT C

Flexible Permit Numbers 6308 and PSDTX137M2

MSS Activity Summary

Facilities	Description	Emissions Activity	EPN
all process units	process unit shutdown/depressurize/drain	vent to flare	MSSFLR
all process units	process unit purge/degas/drain	vent to atmosphere	MSSATM
all process units	process unit startup	vent to flare	MSSFLR
all process units and tanks	preparation for facility/component repair/replacement	vent to flare	MSSFLR
all process units and tanks	preparation for facility/component repair/replacement	vent to atmosphere	MSSATM
all process units and tanks	recovery from facility/component repair/replacement	vent to flare	MSSFLR
all process units and tanks	recovery from facility/component repair/replacement	vent to atmosphere	MSSATM
all process units and tanks	preparation for unit turnaround or facility/component repair/replacement	remove liquid	MSSATM
FCC	startup/shutdown/vent	startup with torch oil and vent reactor	MSSPRO
all floating roof tanks	tank roof landing	operation with landed roof	MSSATM
all floating roof tanks	degas of tank with landed roof	controlled degassing	MSSATM
SRU	startup/shutdown/meltout	vent directly to incinerator on startup and meltout	MSSPRO
see Attachment A	miscellaneous low emitting activities	see Attachment A	MSSATM
all production-related	abrasive blasting	PM from blasting media	MSSATM

Dated July 27, 2009

EMISSION SOURCES, EMISSIONS CAPS AND INDIVIDUAL EMISSION LIMITATIONS

Flexible Permit Numbers 6308 and PSDTX137M2

This table lists the maximum allowable emission caps 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. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Facility/Emission Point Categories	Air Contaminant Name (3)	Emission Rates*	
		lb/hr	TPY **
<u>Routine Operating Emission Caps</u>			
Fired Units	NO _x	419.50	881.02
	CO	286.83	476.03
	SO ₂	255.18	156.07
Fired Units, Cooling Towers (6)	PM	48.55	183.11
Fired Units, Cooling Towers, Tanks, Fugitives (4), Wastewater, Miscellaneous	VOC	370.92	469.32
Cooling Towers (6)	Cl ₂	0.01	0.01
<u>Selected Tanks Emission Caps (7)</u>			
Tanks E11TKS21, E11TKS23, E11TKR17, and E11TKR18	Toluene	1.34	3.01
Tanks E11TKS32, E11TKR9, and E11TKS21	Xylene	6.55	7.48
Tanks E11TKR5, E11TKR7, and E12TK145	Benzene	1.18	1.99
<u>Maintenance, Startup, and Shutdown (MSS) Emission Caps (5)</u>			
Planned MSS	NO _x	405.4	15.64
	CO	390.2	19.35
	SO ₂	1,396	30.81
	PM	17.43	0.83
	VOC	1,270	25.63
	H ₂ S	6.23	0.28
	HCl	0.58	0.03

EMISSION SOURCES, EMISSIONS CAPS, AND INDIVIDUAL EMISSION LIMITATIONS

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
<u>Individual Emission Rate Limits</u>				
FL-97/FL-28/ FL-27	Main, West, and East Flares	VOC	38.19	99.19
		NO _x	4.06	11.50
		CO	20.92	59.22
		SO ₂	7.30	31.27
		H ₂ S	0.08	0.33
C-108	BTX Cooling Tower	PM	0.17	0.74
		Cl ₂	0.01	0.01
C-109	CrudeII Cooling Tower	PM	0.24	1.05
		Cl ₂	0.01	0.01
C-110	Hydrobon Cooling Tower	PM	0.29	1.26
		Cl ₂	0.01	0.01
E29H417	SRU No. 1 Heater	VOC	0.02	0.09
		NO _x	0.58	2.53
		CO	0.31	1.36
		PM	0.03	0.12
		SO ₂	0.12	0.32
F-SRU1	SRU No. 1 Fugitives (4)	VOC	0.11	0.47
		CO	0.03	0.15
		H ₂ S	0.07	0.31
FL-87	SRU No. 1 Flare	VOC	0.02	0.04
		NO _x	0.09	0.20
		CO	0.77	1.69
		SO ₂	0.02	0.03
S-84, S-85	SRU No. 1 and No. 2 Tail Gas Incinerator Stacks (TGI)	VOC	0.13	0.56
		NO _x	2.34	10.30
		CO	14.40	62.90
		PM	0.18	0.78
		SO ₂	39.04	171.01
		H ₂ S	0.42	1.82

EMISSION SOURCES, EMISSIONS CAPS, AND INDIVIDUAL EMISSION LIMITATIONS

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
F-SRU2	SRU No. 2 Fugitives	VOC	0.11	0.47
		CO	0.03	0.15
		H ₂ S	0.07	0.29
FL-88	SRU No. 2 Acid Gas Flare	VOC	0.02	0.04
		NO _x	0.09	0.20
		CO	0.77	1.69
		SO ₂	0.02	0.03
PROPFRZTST	Propane Freeze Test	VOC	5.10	3.72
E13P45	Firewater Diesel Engine E13P45	VOC	0.12	0.05
		NO _x	6.22	2.73
		CO	1.08	0.47
		PM ₁₀	0.44	0.19
		SO ₂	0.96	0.42
E13P45	Firewater Diesel Engine E13P46	VOC	0.12	0.05
		NO _x	6.22	2.73
		CO	1.08	0.47
		PM ₁₀	0.44	0.19
		SO ₂	0.96	0.42
E13P45	Firewater Diesel Engine E13P47	VOC	0.12	0.05
		NO _x	6.22	2.73
		CO	1.08	0.47
		PM ₁₀	0.44	0.19
		SO ₂	0.96	0.42
E13TK39	Diesel Tank for E13P45	VOC	0.01	0.03
E13TK40	Diesel Tank for E13P46	VOC	0.01	0.03
E13TK41	Diesel Tank for E13P47	VOC	0.01	0.03

EMISSION SOURCES, EMISSIONS CAPS, AND INDIVIDUAL EMISSION LIMITATIONS

- (1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
 - (2) Specific point source names. For fugitive sources use area name or fugitive source name.
 - (3) NO_x - total oxides of nitrogen
CO - carbon monoxide
SO₂ - sulfur dioxide
PM - particulate matter, suspended in the atmosphere, including PM₁₀
PM₁₀ - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
Cl₂ - chlorine
H₂S - hydrogen sulfide
HCl - hydrogen chloride
 - (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
 - (5) MSS activities and emission points are identified in Attachment C.
 - (6) Only the FCCU and sulfolane cooling towers are included in the PM and Cl₂ emission caps.
 - (7) These speciated emission caps apply only to the tanks listed. These compounds may be emitted from other facilities as represented in the flexible permit application and subsequent permit amendments.
- * Emission rates are based on and the facilities are limited by the following maximum operating schedule:
_____ Hrs/day _____ Days/week _____ Weeks/year or 8,760 Hrs/year
- ** Compliance with annual emission limits is based on a rolling 12-calendar-month period.

Dated July 27, 2009