UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS

UNITED STATES OF AMERICA, Plaintiff, and The State of Ohio and the Memphis Shelby County Health Department, Plaintiff-Interveners, v. The Premcor Refining Group Inc., and The Lima Refining Company, Defendants.	)	CIVIL ACTION NO. SA-05-CA-0569-RF

CONSENT DECREE ADDENDUM

WHEREAS, Plaintiff, the United States of America ("Plaintiff" or "the United States"), on behalf of the United States Environmental Protection Agency ("EPA"), has simultaneously filed a Complaint against and lodged this Consent Decree Addendum ("Addendum") with The Premcor Refining Group Inc. and the Lima Refining Company (collectively, "Premcor") for alleged environmental violations at petroleum refineries owned and operated by Premcor;

WHEREAS, the United States has initiated a nationwide, broad-based compliance and enforcement initiative involving the petroleum refining industry (the "United States' Refinery Initiative");

WHEREAS, Valero Energy Corporation acquired Premcor Inc. and its subsidiaries via the September 1, 2005, merger of Premcor Inc. with and into Valero Energy Corporation, with Valero Energy Corporation being the surviving corporation of the merger, and with Valero Energy Corporation becoming the ultimate parent of Premcor;

WHEREAS, on November 23, 2005, this Court entered at Docket No. SA-05-CA-0569-RF a separate Consent Decree ("Consent Decree") between the United States, certain plaintiff-interveners, and certain corporate subsidiaries of Valero Energy Corporation (collectively "Valero"), pursuant to the United States' Refinery Initiative, governing petroleum refineries owned by Valero and not subject to this Addendum;

WHEREAS, the United States' Complaint alleges that Premcor has been and is in violation of certain provisions of the Clean Air Act, 42 U.S.C. §7401 et seq., its implementing regulations, the relevant provisions of applicable State Implementation Plans ("SIPs"), and federally-enforceable permits;

WHEREAS, the United States has identified violations of certain provisions of the Clean Air Act, 42 U.S.C. §7401 et seq., its implementing regulations, the relevant provisions of the Ohio SIP, and federally-enforceable permits related to leak detection and repair ("LDAR") services provided by a third party contractor at the Lima Refinery;

WHEREAS, the United States conducted a lengthy and detailed investigation of emission events at Premcor's refinery in Port Arthur, Texas, including, but not limited to, the emission events listed in Appendix T;

WHEREAS, Premcor has not answered or otherwise responded, and need not answer or otherwise respond, to the Complaint in light of the settlement memorialized in this Addendum;

WHEREAS, Premcor has waived any applicable federal or state requirements of statutory notice of the alleged violations;

WHEREAS, Premcor has denied and continues to deny the violations alleged in the Complaints and maintains its defenses to the alleged violations;

WHEREAS, by entering into this Addendum, Premcor has indicated that it is committed to pro-actively resolving the allegations of environmental concerns related to its operations raised in the Complaints;

WHEREAS, Premcor has, in the interest of settlement, agreed to undertake installation of significant air pollution control equipment and enhancements to air pollution management practices at its refineries to reduce air emissions;

WHEREAS, the parties agree that the installation of equipment and implementation of controls pursuant to this Addendum will achieve major improvements in air quality control, and also that certain actions that Premcor has agreed to take are expected to achieve advances in technology and other methods of air pollution control;

WHEREAS, projects undertaken pursuant to this Addendum are for the purposes of abating or controlling atmospheric pollution or contamination by removing, reducing, or preventing the creation of emission of pollutants ("pollution control facilities"), and as such, may be considered for certification as pollution control facilities by federal, state or local authorities;

WHEREAS, in anticipation of entry of this Addendum, Premcor has commenced or completed installation, operation and/or implementation of certain emission control technologies or work practices at various refineries governed by this Addendum;

WHEREAS, the State of Ohio and the Memphis Shelby County Health Department ("Plaintiff-Interveners") have filed Complaints in Intervention alleging that Premcor was and is in violation of the applicable Clean Air Act State Implementation Plan ("SIP") and other state environmental statutory and regulatory requirements;

WHEREAS, Premcor has not answered or otherwise responded, and need not answer or otherwise respond, to the Complaints in Intervention in light of the settlement memorialized in this Addendum;

WHEREAS, the United States, Plaintiff-Interveners, and Premcor have consented to entry of this Addendum without trial of any issues;

WHEREAS, the United States, Plaintiff-Interveners, and Premcor have agreed that settlement of this action is in the best interest of the parties and in the public interest, and that entry of this Addendum without further litigation is the most appropriate means of resolving this matter;

WHEREAS, the objective of this Addendum is substantially to apply, in accordance with the specific provisions contained herein, the requirements of the Consent Decree to Premcor; and

WHEREAS, for ease of reference, each paragraph, part, or section in this Addendum corresponds with the related paragraph, part, or section in the Consent Decree, if any;

NOW, THEREFORE, without any admission of fact or law, and without any admission of the violations alleged in the Complaints, it is hereby ORDERED AND DECREED as follows:

I. JURISDICTION AND VENUE

1. The Complaints state a claim upon which relief can be granted against Premcor under Sections 113, 167 and 211 of the Clean Air Act, 42 U.S.C. §§ 7413, 7477 and 7545, Section 103(c) of the Comprehensive Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9603(c), Section 325(b) of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11045(b), and 28 U.S.C. § 1355. This Court has jurisdiction of the subject matter herein and over the parties consenting hereto pursuant to 28 U.S.C. § 1345 and pursuant to Sections 113, 167, and 211 of the CAA, 42 U.S.C. §§ 7413, 7545 and 7477, Section 103 of CERCLA, 42 U.S.C. § 9603, and Section 304 of EPCRA, 42 U.S.C. § 11004.

2. Venue is proper under Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), and under 28 U.S.C. § 1391(b) and (c).

3. Notice of the commencement of this action has been given to the States of Ohio and Texas and the Memphis Shelby County Health Department in accordance with Section 113(a)(1) of the Clean Air Act, 42 U.S.C. § 7413(a)(1), and as required by Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b).

II. APPLICABILITY

4. The provisions of this Addendum shall apply to and be binding upon the United States, the Ohio Environmental Protection Agency ("Ohio EPA"), and the Memphis Shelby County Health Department**,** and upon Premcor, as well as Premcor's respective successors and assigns, and shall apply to each of the refineries identified herein until the Addendum is terminated with respect to such refinery pursuant to Part XXV (Termination); provided, however, that with respect to any obligation applicable to an individual Premcor Refinery pursuant to Parts IV through XXIV, inclusive, such obligation shall apply only to the specific Premcor corporate entity that owns such Refinery.

5. In the event that Premcor proposes to sell or transfer any of its refineries subject to this Addendum, then Premcor shall advise in writing to such proposed purchaser or successor-in-interest of the existence of this Addendum and provide a copy of the Addendum, and shall send a copy of such written notification by certified mail, return receipt requested, to EPA before such sale or transfer, if possible, but no later than the closing date of such sale or transfer. This provision does not relieve Premcor from having to comply with any applicable state or local regulatory requirement regarding notice and transfer of facility permits.

III. FACTUAL BACKGROUND

6. Among other facilities, Premcor operates four petroleum refineries in the United States for the manufacture of various petroleum-based products, including gasoline, diesel, and jet fuels, and other marketable petroleum by-products. Three of Premcor's refineries are subject to this Addendum, and the fourth is subject to a separate consent decree in United States v. Motiva Enterprises, et al., No. 01-cv-00978 (S.D. Tex.).

7. As more specifically described in Appendix A, Premcor's petroleum refineries subject to this Addendum are located at: Lima, Ohio; Memphis, Tennessee; and Port Arthur, Texas (hereinafter collectively, the "Premcor Refineries").

8. Reserved.

9. Petroleum refining involves the physical, thermal and chemical separation of crude oil into marketable petroleum products.

10. The petroleum refining process at the Premcor Refineries results in emissions of criteria air pollutants, including nitrogen oxides ("NOx"), carbon monoxide ("CO"), particulate matter ("PM"), sulfur dioxide ("SO_2"), as well as volatile organic compounds ("VOCs") and hazardous air pollutants ("HAPs"), including benzene. The primary sources of these emissions are the fluid catalytic cracking units ("FCCUs"), process heaters and boilers, the sulfur recovery plants, wastewater treatment systems, fugitive emissions, and flares.

11. Reserved.

IV. NOx Emissions Reductions from Heaters and Boilers

Program Summary: Premcor will implement a program to reduce NO_x emissions from refinery heaters and boilers greater than 40 MMBtu/hr (HHV) by committing to an interim system-wide weighted average concentration emission limit for NOx of 0.060 lbs./MMBtu, to be achieved by December 31, 2011, and a final system-wide weighted average concentration emission limit for NOx of 0.044 lbs./MMBtu, to be achieved by December 31, 2013.

12. Premcor shall implement at the Premcor Refineries various NOx emission reduction measures and techniques to achieve system-wide NOx emission levels for certain identified heaters and boilers at the Premcor Refineries. For purposes of this Addendum, "heaters and boilers" shall be defined to include any stationary combustion unit used for the purpose of burning fossil fuel for the purpose of (i) producing power, steam or heat by heat transfer, or (ii) heating a material for initiating or promoting a process or chemical reaction in which the material participates as a reactant or catalyst, but expressly excluding any turbine, internal combustion engine, duct burner, CO boiler, incinerator or incinerator waste heat boiler.

A. Initial Inventory, Annual Update, and Compliance Plan for Premcor Refineries

13. Appendix B to this Addendum (the "Initial Inventory") provides an initial list of all heaters and boilers at the Premcor Refineries for which heat input capacity is greater than 40 MMBtu/hr (HHV). For purposes of this Addendum, "Covered Heaters and Boilers" shall include all

heaters and boilers with heat input capacity greater than 40 MMBtu/hr (HHV) regardless of any applicable firing rate permit limitations. However, the FCCU startup heaters at the Port Arthur Refinery designated as B-103A and B-103B will not be considered Covered Heaters provided that each heater is fired no more than 500 hours in any calendar year. Premcor will include this limitation in an operating permit pursuant to Paragraph 291.

14. The Initial Inventory identifies previously constructed heaters and boilers at the Premcor Refineries that comprise the initial list of Covered Heaters and Boilers. The Initial Inventory also provides the following information concerning the Covered Heaters and Boilers:

a. Premcor's designations for each of the Covered Heaters and Boilers;

b. Identification of heat input capacity, and the source of such identification, for each of the Covered Heaters and Boilers. For purposes of this subparagraph, heat input capacity for each Covered Heater or Boiler shall equal the lesser of any applicable permit limit or Premcor's best then-current estimate of its maximum heat input capacity (hereinafter, "Heat Input Capacity");

c. Identification of all applicable NOx emission limitations, in pounds per million Btu, for each of the Covered Heaters and Boilers; and

d. Statement of whether a continuous emission monitoring system ("CEMS") for NOx has been installed on the respective Covered Heater or Boiler.

15. Premcor shall submit to EPA an annual update to the Initial Inventory on or before March 31 of each calendar year from 2008 through 2013, inclusive (the "Annual Update Report"), provided, however, that Premcor shall not be obligated to submit any Annual Update Report after satisfying the provisions of Paragraphs 21 and 27. Premcor shall designate the final Annual Update Report. The Annual Update Report shall revise any information included in the Initial Inventory or most recent Annual Update Report to the extent appropriate based upon the construction of a Covered Heater or Boiler or any change during the prior year to any of the previously existing Covered Heaters and Boilers, including the date of installation of any CEMS installed during the prior year. The Annual

Update Report shall also include for each Covered Heater and Boiler the estimated actual emission rate in pounds of NOx per MMBtu heat input (HHV) and tons per year, and the type of data used to derive the emission estimate (i.e., emission factor, stack test, or CEMS data).

B. Interim Emission Reductions and Timeframes for Premcor Refineries

16. On or before December 31, 2008, Premcor shall submit to EPA a compliance plan for attainment, by December 31, 2011, of a system-wide weighted average, as determined in accordance with Paragraph 28, for Covered Heaters and Boilers of 0.060 lbs.-NOx/MMBtu (the "Interim Compliance Plan"). The Interim Compliance Plan is intended to reflect Premcor's then-current strategy for satisfying the requirements of Paragraph 17. Premcor shall not be bound by the terms of the Interim Compliance Plan.

17. By no later than December 31, 2011**,** Premcor shall install NOx control technologies on, or otherwise limit NOx emissions from, certain Covered Heaters and Boilers such that the system-wide weighted average, as determined in accordance with Paragraph 28, for NO_x emissions from the Covered Heaters and Boilers is no greater than 0.060 lbs.-NOx/MMBtu.

17A. In the context of satisfying the requirements of Paragraph 17, Premcor shall install controls at a minimum of three Covered Heaters and Boilers at each of the Premcor Refineries to achieve a NOx emission rate of no greater than 0.044 lbs-NOx/MMBtu at each selected heater and boiler by December 31, 2011. At least one of the three controlled Covered Heaters and Boilers at the Lima and Port Arthur Refineries will have a heat input capacity in excess of 150 MMBtu/hr.

18. Premcor shall select from among the Covered Heaters and Boilers those units for which NOx emissions shall be controlled or otherwise reduced so as to satisfy the requirements of Paragraphs 17 and 17A.

19. For the purposes of Paragraphs 17 and 17A and in the event that Premcor permanently ceases operation of any Covered Heaters or Boilers on or before December 31, 2011, then Premcor may include each such shutdown unit in its demonstration of compliance with Paragraphs 17 and 17A

if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraph 28 of compliance with Paragraph 17, the emissions of any such shutdown unit shall be equal to 0.000 lbs/MMBtu NOx, and the heat input attributed to any shutdown Covered Heater or Boiler shall be its Heat Input Capacity prior to shutdown.

C. Final Emission Reductions and Deadlines for Premcor Refineries

20. On or before December 31, 2010, Premcor shall submit to EPA a compliance plan for attainment by December 31, 2013, of a system-wide weighted average for Covered Heaters and Boilers of 0.044 lbs.-NOx/MMBtu (the "Compliance Plan"), as determined in accordance with Paragraph 28. The Compliance Plan is intended to reflect Premcor's then-current strategy for satisfying the requirements of Paragraph 21. Premcor shall not be bound by the terms of the Compliance Plan.

21. By no later than December 31, 2013, Premcor shall install NOx control technology on, or otherwise limit NOx emissions from, certain Covered Heaters and Boilers such that the system-wide weighted average, as determined in accordance with Paragraph 28, for NOx emission from the Covered Heaters and Boilers is no greater than 0.044 lbs.-NOx/MMBtu.

22. Premcor shall select from among the Covered Heaters and Boilers those units for which NOx emissions shall be controlled or otherwise reduced so as to satisfy the requirements of Paragraph 21.

23. For the purposes of Paragraph 21 in the event that, on or before December 31, 2013, Premcor permanently ceases operation of any Covered Heaters or Boilers, then Premcor may include each such shutdown unit in its demonstration of compliance with Paragraph 21 if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraph 28 of compliance with Paragraph 21, the emissions of any

such shutdown unit shall be equal to 0.000 lbs/MMBtu NOx, and the heat input attributed to any shutdown Covered Heater or Boiler shall be its Heat Input Capacity prior to shutdown.

D. Reserved

24. – 26. Reserved.

E. Compliance Demonstration

27. By no later than March 31, 2012, Premcor shall submit to EPA a report demonstrating compliance with Paragraph 17. By no later than March 31, 2014, Premcor shall submit to EPA a report demonstrating compliance with Paragraph 21. The compliance reports submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's interim or final compliance demonstration:

a. The NOx emission limit for each Covered Heater or Boiler at the Premcor Refineries which is the least of the following: (i) the NOx emission limit, in pounds per MMBtu at HHV (as a 365-day rolling average if based on CEMS, or as a 3-hour average if based on stack tests) based upon any existing federally enforceable, non-Title V (permanent) permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), of the Covered Heater or Boiler, or (ii) the NOx emission limit, in pounds per MMBtu at HHV, reflected in any permit application for a federally enforceable, non-Title V (permanent) permit, including a consolidated permit where such limit would also be permanent, submitted by Premcor for such Covered Heater or Boiler prior to the date of submittal of the Compliance Report. In the event that Premcor identifies a NOx emission limit, in pounds per MMBtu at HHV, for a Covered Heater or Boiler pursuant to this paragraph based on a NOx emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application to increase the NOx emission limit reflected in such application without prior EPA approval.

b. Heat Input Capacity, in MMBtu/hr at HHV, for each Covered Heater and Boiler at the Premcor Refineries, including an explanation of any change relative to that reported in the most recent Annual Update.

c. A demonstration of compliance with Paragraph 17 or 21, as applicable, performed in accordance with Paragraph 28.

28. Premcor shall demonstrate compliance with the provisions of Paragraph 17 by the following inequality:

$$0.060 \geq [(\sum_{i}^{n} (EL_i \times HIR_i)) + IVN] / [\sum_{i}^{n} (HIR_i) + IVD]$$

Premcor shall demonstrate compliance with the provisions of Paragraph 21 by the following inequality:

$$0.044 \geq [(\sum_{i}^{n} (EL_i \times HIR_i)) + FVN] / [\sum_{i}^{n} (HIR_i) + FVD]$$

For the purposes of Paragraph 28:

EL_i = The relevant NOx Emission Limit for the Premcor Covered Heater or Boiler "i", in pounds per million Btu (HHV), as reported pursuant to Paragraph 27(a);

HIR_i = Heat Input Capacity of the Premcor Covered Heater or Boiler "i", in million Btu (HHV) per hour, as reported pursuant to Paragraph 27(b);

n = The total number of Covered Heaters and Boilers at the Premcor Refineries.

IVN = The summation, in pounds per hour, of the products of the relevant NOx Emission Limit [in lbs per million Btu (HHV)] and the Heat Input Capacity (in million Btu per hour) for each of the Covered Heaters and Boilers as reported in the numerator in the interim compliance report (to be submitted by Valero to EPA by March 31, 2010) pursuant to Paragraph 27 of the Consent Decree.

IVD = The summation of the Heat Input Capacities in million Btu (HHV) per hour for all of the Covered Heaters and Boilers as reported in the denominator in the interim compliance report (to be submitted by Valero to EPA by March 31, 2010) pursuant to Paragraph 27 of the Consent Decree.

FVN = The summation, in pounds per hour, of the products of the relevant NOx Emission Limit [in lbs per million Btu (HHV)] and the Heat Input Capacity (in million Btu per hour) for each of the Covered Heaters and Boilers as reported in the numerator in the final compliance report (to be submitted by Valero to EPA by March 31, 2012) pursuant to Paragraph 27 of the Consent Decree.

FVD = The summation of the Heat Input Capacities in million Btu (HHV) per hour for all of the Covered Heaters and Boilers as reported in the denominator in the final compliance report (to be submitted by Valero to EPA by March 31, 2012) pursuant to Paragraph 27 of the Consent Decree.

F. Monitoring Requirements

29. By no later than December 31, 2013, for Covered Heaters and Boilers existing on the Date of Lodging for which Premcor takes an emission limit of <0.060 lbs NOx/MMBtu without adding additional controls to meet the requirement of Paragraphs 17 and 21; and beginning no later than 180 days after installing controls on a Covered Heater and Boiler for purposes of compliance with the requirement of Paragraphs 17 and 21, Premcor shall monitor each such Covered Heater or Boiler at the Premcor Refineries as follows:

a. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity of 150 MMBtu/hr (HHV) or greater, Premcor shall install or continue to operate a continuous emission monitoring system ("CEMS") for NOx;

b. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity greater than 100 MMBtu/hr (HHV) but less than or equal to 150 MMBtu/hr (HHV), Premcor shall install or continue to operate a CEMS for NOx, or monitor NOx emissions with a predictive emissions monitoring system ("PEMS") developed and operated pursuant to the requirements of Appendix S of this Addendum;

c. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity of less than or equal to 100 MMBtu/hr(HHV), Premcor shall conduct an initial performance test and any periodic tests that may be required by EPA or by the applicable State or local permitting authority under applicable regulatory authority. Premcor shall report the results of the initial

performance testing to EPA and the appropriate Plaintiff-Intervener. Premcor shall use Method 7E or an EPA-approved alternative test method to conduct initial performance testing for NOx emissions required by this subparagraph (c).

Nothing in this Addendum shall preclude a facility from converting a 3-hour rolling average limit to the same limit expressed as a 365-day rolling average limit if such demonstration of compliance is based upon CEMS or PEMS.

30. Premcor shall install, certify, calibrate, maintain and operate all NOx CEMS required by Paragraph 29 in accordance with the provisions of 40 C.F.R. Section 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4., Premcor must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS required by Paragraph 29 at least once every three (3) years. Premcor must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

G. Reserved

31. – 33. Reserved.

H. Additional Provisions

34. Nothing in this Addendum is intended to limit Premcor from satisfying any provisions of this Part IV earlier than the applicable compliance date specified in this part.

V. NOx EMISSION REDUCTIONS FROM FCCUs

Program Summary: Premcor will implement a program to limit NOx emissions from its FCCU regenerators by achieving a system-wide average of unit-specific NOx concentration emission limits for each of the FCCUs subject to this Part V.

A. – F. Reserved

35. – 44. Reserved.

G. FCCU NOx Emission Reductions

45. Premcor shall attain a system-wide, coke burn-weighted average of NOx concentration emission limits for each FCCU at the Premcor Refineries (hereinafter collectively referred to as "Covered FCCUs") in accordance with the provisions of this Section G.

45A. On or before December 31, 2011, Premcor shall complete an optimization study of the oxygen control system (O_2 CS) on the FCCUs at the Lima and Memphis Refineries in an effort to achieve NOx concentration emissions of 20 ppmvd (at 0% O_2) as a 365-day rolling average and 40 ppmvd (at 0% O_2) as a 7-day rolling average. Within sixty days after the conclusion of each optimization study, Premcor shall submit to EPA and the appropriate Plaintiff-Intervener reports detailing the NOx concentration emissions for the FCCUs through the optimization of the O_2 CS.

46. Appendix C to this Addendum (the "Initial FCCU Annual Coke Burn Rates") provides a list of all Covered FCCUs, as of the Date of Lodging. Appendix C also identifies Premcor's best estimate of maximum coke burn rate and any permit limits applicable to maximum coke burn rate for each such FCCU, as of the Date of Lodging.

47. Premcor shall submit to EPA an annual update to Appendix C on or before March 31 of each calendar year from 2009 through 2014, inclusive (the "Annual FCCU Update Report"), provided, however, that Premcor shall not be obligated to submit any Annual Update Report after satisfying the provisions of Paragraphs 55 and 56. The Annual FCCU Update Report shall identify Premcor's best estimate of maximum coke burn rate and any permit limits relating to maximum coke burn rate for each Covered FCCU as of the date of the report. Premcor shall identify and explain any such differences from the previous report under Paragraph 46 and this Paragraph 47.

48. Premcor shall attain the following system-wide, coke burn-weighted average of NOx concentration emission limits for Covered FCCUs by the following dates: (a) an interim NOx concentration emission limit average of 69.2 ppmvd (at 0% O_2), as a 365-day rolling average, by December 31, 2010 (the "Interim NOx System-Wide Average"), as determined in accordance with

Paragraph 54 and (b) a final NOx concentration emission limit average of 33.4 ppmvd (at 0% O_2), as a 365-day rolling average, by December 31, 2013 (the "NOx System-Wide Average"), as determined in accordance with Paragraph 56.

49. Premcor shall select from among the Covered FCCUs those units for which NOx emissions shall be controlled or otherwise reduced so that Premcor satisfies the Interim NOx System-Wide Average and the NOx System-Wide Average. Provided however, no Covered FCCU will have a permit limit higher than 80 ppmvd at 0% O_2 on a 365-day rolling average at the time it demonstrates compliance with Paragraph 48(b).

50. For the purposes of Premcor's satisfaction of Paragraph 48(a) and in the event that, subsequent to the Date of Entry of this Addendum and before December 31, 2010, Premcor permanently ceases operation of any Covered FCCU at the Premcor Refineries, then Premcor may include each such shutdown unit in its demonstration of compliance with the Interim NOx System-Wide Average, if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraphs 53 and 54 of compliance with the Interim NOx System-Wide Average, the emissions rate of any such shutdown unit shall be equal to 20 ppmvd NOx at 0% O_2, and the maximum coke burn rate attributed to any such shutdown FCCU shall equal the lesser of Premcor's best estimate of maximum coke burn rate or the FCCU's permit limit relating to maximum coke burn rate prior to the FCCU shutdown, provided, however, that if a new FCCU is also constructed and operated at such refinery, then the maximum coke burn rate and the NOx emission limit of such new FCCU shall be used in lieu of the original Covered FCCU.

51. For purposes of this Section V.G, "maximum coke burn rate" shall mean the lesser of the permitted coke burn rate, if any, or Premcor's best current estimate on an average annual basis.

52. For the purposes of Premcor's satisfaction of Paragraph 48(b) and in the event that Premcor permanently ceases operation of any Covered FCCU subsequent to the Date of Entry of this Addendum and before December 31, 2013, then Premcor may include each such shutdown unit in its demonstration of compliance with the NOx System-Wide Average, if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraphs 55 and 56 of compliance with the NOx System-Wide Average, the concentration emission limit of any such shutdown unit shall be equal to 20 ppmvd NOx at 0% O_2, and the maximum coke burn rate attributed to any such Covered FCCU that is shutdown shall equal the lesser of Premcor's best estimate of maximum coke burn rate or the FCCU's permit limit relating to maximum coke burn rate prior to the FCCU shutdown, provided, however, that if a new FCCU is also constructed and operated at such refinery, then the maximum coke burn rate and the NOx emission limit of such new FCCU shall be used in lieu of the original Covered FCCU.

53. Compliance Demonstration: By March 31, 2011, Premcor shall submit to EPA a report demonstrating compliance with the Interim NOx System-Wide Average. The compliance report submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's compliance demonstration:

a. The NOx concentration emission limit for each Covered FCCU at the Premcor Refineries which is the least of the following: (i) the allowable NOx concentration emission limit (as a 365-day average), based upon any existing**,** federally enforceable non-Title V permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), or (ii) the NOx concentration emission limit reflected in any application for a federally enforceable non-Title V permit, including a consolidated permit, where such limit would also be permanent, submitted by Premcor for such Covered FCCU prior to the date of submittal of the compliance report. In the event that Premcor identifies a NOx concentration emission limit for a Covered FCCU pursuant to this

paragraph based on a NOx concentration emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application, nor request an increase in the NOx concentration emission limit reflected in such application, without prior EPA approval.

b. Reserved.

c. A demonstration of compliance with the Interim NOx System-Wide Average performed in accordance with Paragraph 54.

54. Premcor shall demonstrate compliance with the Interim NOx System-Wide Average by meeting the following inequality:

$$69.2 \geq [(\sum_{i}^{n} (EL_i \times HIR_i)) + IVN] / [(\sum_{i}^{n} HIR_i) + IVD]$$

Where:

EL_i = The relevant NOx concentration emission limit for the Covered FCCU "i" at the Premcor Refineries, in parts per million, as reported pursuant to Paragraph 53(a);

HIR_i = Maximum coke burn rate of the Covered FCCU "i" at the Premcor Refineries, as reported pursuant to Paragraph 47;

n = The total number of Covered FCCUs at the Premcor Refineries

IVN = The summation of the products of the relevant NOx concentration emission limit (in parts per million) and the Maximum coke burn rate for each Covered FCCU and the Golden Eagle FCCU as reported in the numerator pursuant to Paragraph 53 of the Consent Decree.

IVD = The summation of the Maximum coke burn rates for all Covered FCCUs and the Golden Eagle FCCU as reported in the denominator pursuant to Paragraph 53 of the Consent Decree.

55. Compliance Demonstration: By March 31, 2014, Premcor shall submit to EPA a report demonstrating compliance with the NOx System-Wide Average. The compliance report submitted

pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's compliance demonstration:

a. The NOx emission limit for each Covered FCCU at the Premcor Refineries which is the least of the following: (i) the allowable NOx concentration emission limit (as a 365-day average), based upon any existing**,** federally enforceable non-Title V permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), or (ii) the NOx concentration emission limit reflected in any application for a federally enforceable non-Title V permit, including a consolidated permit, where such limit would also be permanent, submitted by Premcor for such Covered FCCU prior to the date of submittal of the compliance report. In the event that Premcor identifies a NOx concentration emission limit for a Covered FCCU pursuant to this paragraph based on a NOx concentration emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application, nor request an increase in the NOx concentration emission limit reflected in such application without prior EPA approval.

b. Reserved.

c. A demonstration of compliance with the NOx System-Wide Average performed in accordance with Paragraph 56.

56. Premcor shall demonstrate compliance with the NOx System-Wide Average by meeting the following inequality:

$$33.4 \geq [(\sum_{i}^{n} EL_i \times HIR_i) + FVN] / [(\sum_{i}^{n} HIR_i) + FVD]$$

Where:

EL_i = The relevant NOx concentration emission limit for the Covered FCCU "i", in parts per million, as reported pursuant to Paragraph 55(a);

HIR_i = Maximum coke burn rate of the Covered FCCU "i" at the Premcor Refineries, as reported pursuant to Paragraph 47;

n = The total number of Covered FCCUs at the Premcor Refineries.

FVN = The summation of the products of the relevant NOx concentration emission limit (in parts per million) and the Maximum coke burn rate for each Covered FCCU and the Golden Eagle FCCU as reported in the numerator pursuant to Paragraph 55 of the Consent Decree.

FVD = The summation of the Maximum coke burn rates for all Covered FCCU's and the Golden Eagle FCCU as reported in the denominator pursuant to Paragraph 55 of the Consent Decree.

57. – 58. Reserved.

H. Additional Provisions

59. Notwithstanding any provision of this Addendum to the contrary and in lieu of complying with any NOx emission control requirements established pursuant to this Part V, Premcor may elect to achieve NOx concentration emission limits of 20 ppmvd (at 0% O_2) or less as a 365-day rolling average and 40 ppmvd (at 0% O_2) or less as a 7-day rolling average by permanently shutting down such FCCU or FCCU-regenerator, or by application of any emission reduction method or technology, including any technology not specified in this Addendum, by the refinery-specific compliance date specified in this Part V. Premcor's election to satisfy its obligations under this Part V through compliance with this paragraph shall not limit the applicability or extent of Part XXIV (Effect of Settlement) with respect to such Covered FCCU.

60. Premcor shall take such action as may be necessary to ensure that each 365-day rolling average NOx emission limit used to demonstrate compliance under Paragraphs 55 and 56 is less than or equal to 80 ppm. In addition and as part of each permit or permit application under Paragraphs 55 and 56, Premcor shall also have or have applied for a 7-day rolling average NOx concentration emission limit that shall be numerically twice the 365-day rolling average NOx concentration emission limit used for that FCCU to demonstrate compliance under Paragraphs 55 and 56.

I. CEMS

61. Beginning no later than the Date of Entry for each Covered FCCU, Premcor shall use NOx and O_2 CEMS to monitor performance of the FCCU and to report compliance with the terms and conditions of this Addendum.

62. The CEMS will be used to demonstrate compliance with the respective NOx concentration emission limits established pursuant to this Part V. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct CGA each calendar quarter during which a RAA or a RATA is not performed.

63. Reserved.

VI. SO_2 Emission Reductions from FCCUs

Program Summary: Premcor shall implement a program to reduce SO_2 emissions from their FCCUs, which shall include the commitment to limit SO_2 emissions from the Memphis and Port Arthur FCCUs to specific concentrations and otherwise limit SO_2 emissions from the Lima FCCU through the use of SO_2-reducing catalyst additives.

A. – L. Reserved

64. – 82. Reserved.

M. Additional Provisions

83. Provisions for reduction of SO_2 emissions from Premcor refineries.

a. Memphis. Upon Date of Entry of this Addendum, Premcor shall comply with SO_2 concentration emission limits at the point of emission from the Memphis Refinery FCCU to the atmosphere of no greater than 25 ppmvd measured as a 365-day rolling average and 50 ppmvd measured as a 7-day rolling average, both at 0% O_2, and will continue to operate a wet gas scrubber at the Memphis Refinery FCCU.

b. Port Arthur. Upon Date of Entry of this Addendum, Premcor shall comply with SO_2 concentration emission limits at the point of emission from the Port Arthur Refinery FCCU to the atmosphere of no greater than 25 ppmvd measured as a 365-day rolling average and 50 ppmvd measured as a 7-day rolling average, both at 0% O_2, and will continue to operate a wet gas scrubber at the Port Arthur Refinery FCCU.

c. Lima. Premcor shall commence implementation of the SO_2 adsorbing catalyst additive protocol described in Appendix E.

84. Reserved.

85. Premcor may elect to submit for approval by EPA, after an opportunity for consultation with the Ohio EPA, a plan for the operation of the Lima FCCU (including associated air pollution control equipment) during hydrotreater outages. Any such plan shall provide for the minimization of emissions during hydrotreater outages to the extent practicable. The plan shall consider, at a minimum, the use of low sulfur feed, storage of hydrotreated feed and an increase in additive addition rate. Any short term emission limits established for the Lima FCCU pursuant to this Addendum shall not apply during periods of hydrotreater outage provided that Premcor is in compliance with any plan submitted by Premcor under this paragraph for the Lima FCCU, and is maintaining and operating the FCCU in a manner consistent with good air pollution control practices. In order for the relief for short-term emission limits afforded by this paragraph to apply to a period of hydrotreater outage, Premcor shall comply with the plan approved by EPA under this paragraph at all times, including periods of startup, shutdown or malfunction of the hydrotreater. In addition, in the event that Premcor asserts that the basis for a specific hydrotreater outage for which Premcor seeks to secure the relief from short term emission limits provided under this paragraph is a shutdown (where no catalyst change out occurs) required by ASME pressure vessel requirements or applicable state boiler requirements, Premcor shall submit to EPA a report that identifies the relevant requirements and justifies Premcor's decision to

implement the shutdown during the selected time period. For the purposes of this Paragraph 85, "hydrotreater" shall include any units that hydrotreat or otherwise desulfurize FCCU feedstocks.

86. Notwithstanding any provision of this Addendum to the contrary, Premcor may elect to limit emissions from the Lima FCCU to SO_2 concentrations of 25 ppmvd or less, measured as a 365-day rolling average, and 50 ppmvd or less, measured as a 7-day rolling average, each at 0% O_2, including without limitation by permanently shutting down such FCCU or by application of any emission reduction method or technology, including any technology not specified in this Addendum. Notwithstanding any provision of this Addendum to the contrary and in lieu of complying with any specific SO_2 emission control requirements established pursuant to this Part VI for a WGS, Premcor may elect to shut down such Refinery's FCCU. In the event that Premcor elects to demonstrate compliance with this Part VI for the Lima FCCU by complying with this paragraph, then Premcor must achieve compliance with this paragraph for the Lima FCCU by no later than the refinery-specific compliance date for completion of the demonstration period identified in Appendix E or as otherwise specified in this Part VI. Premcor's election to satisfy its obligations under this Part VI for any Premcor Refinery subject to this Addendum through compliance with this paragraph shall not limit the applicability or extent of Part XXIV (Effect of Settlement) with respect to such FCCU.

87. – 88. Reserved.

N. <u>Monitoring Emissions and Demonstrating Compliance</u>

89. Beginning no later than the Date of Entry for each covered FCCU, Premcor shall use SO_2 and O_2 CEMS to monitor performance of the FCCU and to report compliance with the terms and conditions of this Addendum.

90. CEMS will be used to demonstrate compliance with the respective SO_2 concentration emission limits established pursuant to this Part VI. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the

provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

91. Reserved.

92. All CEMS data collected by Premcor during the effective life of the Addendum shall be made available by Premcor to EPA upon demand as soon as practicable.

93. Reserved.

VII. CO, OPACITY AND PARTICULATE EMISSIONS FROM FCCUs

Program Summary: Premcor shall implement a program to limit CO and particulate emissions from its FCCUs and shall implement monitoring at each FCCU sufficient to demonstrate compliance with emission standards specified in this Part.

94. CO Emission Standard. Premcor shall limit CO emissions from the Covered FCCUs at the Premcor Refineries to 500 ppmvd (at 0% O_2), measured as a one-hour block average, in accordance with the schedule identified herein.

95. Particulate Emission Standard. Premcor shall limit particulate emissions from the Covered FCCUs at the Premcor Refineries to one (1) pound per 1,000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate), measured as a one-hour average over three performance test runs, in accordance with the schedule identified herein.

96. Except as specified in Paragraph 104 and by no later than ninety (90) days from the Date of Entry of this Addendum, Premcor shall ensure that the FCCUs located at the Memphis and Port Arthur Refineries shall comply with the CO, opacity and particulate emission standards specified

in Paragraphs 94 and 95, respectively, and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from FCCU regenerators.

97. By no later than ninety (90) days from the Date of Entry of this Addendum, Premcor shall ensure that the FCCU located at the Lima Refinery shall comply with the CO emission standard specified in Paragraph 94, and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO emissions from FCCU regenerators.

98. By no later than December 31, 2013, Premcor shall ensure that the FCCU located at the Lima Refinery complies with the opacity and particulate emission standards specified in Paragraph 95 and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to opacity and particulate emissions from FCCU regenerators.

99. Reserved.

100. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from FCCU regenerators.

101. CEMS or an EPA approved alternative monitoring plan or monitoring waiver will be used to demonstrate compliance with the respective CO emission limits established pursuant to this Part VII. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each

calendar quarter during which a RAA or a RATA is not performed. To the extent that Premcor has conducted any performance testing of the relevant unit for PM emissions, and such performance testing was conducted in accordance with the procedures specified in EPA Method 5B or 5F, as appropriate, or 40 C.F.R. Part 63, Subpart UUU, and demonstrated compliance with the emission limits established under this part, then such performance testing shall satisfy any obligation otherwise applicable under this Part to conduct performance testing under 40 C.F.R. Part 60, Subparts A and J. Any future performance testing performed by Premcor to demonstrate compliance with the particulate emission limitations established by this Part shall be conducted in accordance with EPA Method 5B or 5F, as appropriate, set forth at 40 C.F.R. Part 60, Appendix A.

102. The CO, opacity, and particulate limits established pursuant to this Part VII shall not apply during periods of startup, shutdown or malfunction of the FCCUs or malfunction of the applicable CO or particulate control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

103. Continuous Opacity Monitoring System (COMS) or an approved AMP will be used to demonstrate compliance with the respective opacity limits established pursuant to this Part VII. Premcor shall make any COMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all COMS required by this paragraph in accordance with the provisions of 40 C.F.R. §60.11, §60.13, and Part 60 Appendix A, and the applicable performance specification test in 40 C.F.R. Part 60 Appendix B.

104. Within 180 days of the Date of Entry of the Addendum, Premcor will have submitted or shall submit to EPA complete opacity alternative monitoring plan ("AMP") applications for the FCCUs located at Memphis and Port Arthur. If such AMPs are not approved, Premcor shall within ninety (90) days of receiving notice of such disapproval either invoke the dispute resolution provisions

of Part XXIII or submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring. These FCCUs shall not be subject to the applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to opacity from FCCU regenerators until EPA approves AMPs for opacity or Premcor complies with the above-identified requirements of this paragraph.

105. Reserved.

106. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to propose to EPA an alternative compliance monitoring plan (AMP) under 40 C.F.R. Part 60, Subpart A, for CO, opacity or particulate emissions from FCCUs under NSPS Subpart J.

VIII. NSPS APPLICABILITY TO SO_2 EMISSIONS FROM FCCU REGENERATORS

Program Summary: Premcor shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO_2 emissions from FCCU Regenerators, by the deadlines specified in this Part.

107. Premcor's FCCU Regenerators at the following refineries shall be "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO_2 emissions from FCCU Regenerators, on the following dates:

a. Lima Regenerator – December 31, 2010, or as specified in Paragraph 111

b. Memphis Regenerator – Upon Date of Entry

c. Port Arthur Regenerator – Upon Date of Entry

108. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO_2 emissions from FCCU Regenerators.

109. CEMS will be used to demonstrate compliance with the respective SO_2 emission limits established pursuant to this Part VIII. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

110. The SO_2 limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the FCCUs and hydrotreaters, or the malfunction of SO_2 control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

111. By December 31, 2008, Premcor shall submit to EPA a complete alternative monitoring plan ("AMP") application for NSPS Subpart J monitoring for SO_2 at the Lima FCCU. If such AMP is not approved, Premcor shall within ninety (90) days of receiving notice of such disapproval either invoke the dispute resolution provisions of Part XXIII or submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.

112. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to propose to EPA an alternative compliance monitoring plan under 40 C.F.R. Part 60, Subpart A, for SO_2 emissions from FCCU regenerators.

IX. SO_2 AND NSPS REQUIREMENTS FOR HEATERS AND BOILERS

Program Summary: Premcor shall undertake the following measures at the Premcor Refineries to reduce SO_2 emissions from heaters and boilers by eliminating or minimizing the burning of fuel oil, and satisfying the provisions of 40 C.F.R. Part 60, Subparts A and J, as such provisions apply to fuel gas combustion devices.

113. By no later than the Date of Entry, Premcor shall discontinue the burning or combustion of Fuel Oil in any of the heaters and boilers at the Premcor Refineries, except as provided in Paragraph 114. For purposes of this Addendum, **"**Fuel Oil" shall mean fuel that is predominantly in the liquid phase at the point of combustion with a sulfur content of greater than 0.05% by weight.

114. Notwithstanding any provision of this Addendum to the contrary, Fuel Oil may be combusted or burned during periods of natural gas curtailment by suppliers or during periods approved by EPA for purposes of test runs and operator training at any refinery subject to this Addendum. During any such period of natural gas curtailment, test runs or operator training, only low sulfur (0.2% sulfur until December 31, 2009, 0.05 wt % sulfur thereafter) Fuel Oil shall be combusted or burned. Prior to conducting test runs or operator training at a refinery during which Fuel Oil will be burned pursuant to this paragraph, Premcor shall submit proposed schedules for such test runs or training periods to EPA for review and approval. In the event that EPA does not respond to such proposed schedules within thirty (30) days of submission pursuant to this paragraph, then such proposed schedules shall be deemed approved in accordance with the proposals submitted.

115. Except as provided in Paragraph 118, by no later than sixty (60) days after the Date of Entry, Premcor shall ensure that all heaters and boilers located at the Premcor Refineries are "affected facilities" as fuel gas combustion devices, for purposes of 40 C.F.R. Part 60, Subpart J, and shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices.

116. – 117. Reserved.

118. By no later than the date specified in Paragraph 115, all heaters and boilers at such refineries shall comply with the applicable requirements of NSPS Subpart A and J for fuel gas combustion devices, except for those heaters or boilers listed in Appendix O, which shall be affected facilities and shall be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices by the dates listed in Appendix O. All CEMS installed pursuant to this paragraph shall be installed, certified, calibrated, maintained and operated in accordance with the applicable requirements of 40 C.F.R. §§ 60.11 and 60.13 and 40 C.F.R. Part 60, Appendix F as provided in Paragraph 121 below.

119. Within two (2) years of Entry of the Addendum, Premcor may submit to EPA and the appropriate Plaintiff-Intervener complete alternative monitoring plan ("AMP") applications for NSPS Subpart J monitoring of fuel gas combustion devices. If such AMP is not approved, then within ninety (90) days of receiving notice of such disapproval, Premcor shall submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring. For some heaters and boilers that combust low-flow VOC streams from vents, pumpseals and other sources, it is anticipated that some AMP applications will rely in part on calculating a weighted average H_2S concentration of all VOC and fuel gas streams that are burned in a single heater or boiler and demonstrating with alternative monitoring that either the SO_2 emissions from the heater or boiler will not exceed 20 ppm or that the weighted average H_2S concentration is not likely to exceed 162 ppm H_2S. EPA shall not reject an AMP solely due to the AMP's use of one of these approaches to demonstrate compliance with NSPS Subpart J.

120. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without

limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices.

121. The CEMS or approved AMPs will be used to demonstrate compliance with the respective H_2S/SO_2 concentration emission limits established pursuant to this Part IX. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

122. The SO_2 limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the heaters and boilers or the malfunction of SO_2 control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions.

X. BENZENE WASTE NESHAP PROGRAM ENHANCEMENTS

Program Summary: Premcor shall undertake the following measures to minimize fugitive benzene waste emissions at each of the Refineries that are covered by this Addendum.

123. Premcor agrees to undertake the measures set forth in this Part X, which establish enhancements to applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP" or "Subpart FF"), and which will minimize or eliminate fugitive benzene waste emissions at the Premcor Refineries.

A. Compliance Status and Schedule

124. Premcor shall comply with the compliance options specified below:

a. Premcor's Lima and Memphis Refineries shall comply with the compliance option set forth at 40 C.F.R. 61.342(e) (herein referred to as the "6 BQ Compliance Option"), to the extent that either refinery continues to have total annual benzene ("TAB") quantity ≥10 megagrams per year ("Mg/yr"). Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Lima and Memphis Refineries shall comply with the 6 BQ Compliance Option. Prior to completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Lima and Memphis Refineries shall continue to operate current controls for purposes of complying with the 6 BQ Compliance Option.

b. Premcor's Port Arthur Refinery shall continue to comply with the compliance option set forth at 40 CFR 61.342(c), utilizing the exemptions set forth in 40 CFR 61.342(c)(2) and (c)(3)(ii) and the aggregation provisions set forth in 40 CFR 61.348(b) (hereinafter referred to as the "2 Mg Aggregate-and-Treat Compliance Option"), to the extent that it continues to have total annual benzene ("TAB") quantity ≥ 10 megagrams per year ("Mg/yr"). Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Port Arthur Refinery shall comply with the 2 Mg Aggregate-and-Treat Compliance Option. Prior to completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Port Arthur Refinery shall continue to operate current controls for purposes of complying with the 2 Mg Aggregate-and-Treat Compliance Option.

124A. Premcor, in its sole discretion, may transition the Port Arthur Refinery from a 2Mg compliance option to the 6BQ Compliance Option in accordance with the provisions of this paragraph and Paragraph 125.

125. On or before the Date of Entry, if Premcor chooses to transition the Port Arthur Refinery, then Premcor shall provide written notice to EPA of Premcor's determination to transition the Port Arthur Refinery to the 6 BQ Compliance Option. Upon completion of all corrective action

identified in the plan pursuant to Paragraph 134 for the Port Arthur Refinery, Premcor shall comply with all standards of Subpart FF that are applicable to facilities utilizing the 6 BQ Compliance Option, including the monitoring, recordkeeping and reporting requirements of 40 C.F.R. §§ 61.354, 61.356 and 61.357, respectively, as applicable to facilities utilizing the 6 BQ Compliance Option. Once converted, subparagraph 124(b) shall no longer apply.

B. Refinery Compliance Status Changes

126. Commencing on the Date of Entry of the Addendum and continuing through termination, Premcor shall not change the compliance status of the Lima or Memphis Refineries from the 6 BQ Compliance Option to a 2 Mg compliance option. Subsequent to achieving compliance with Paragraph 125, if applicable, Premcor shall not change the compliance status of the Port Arthur Refinery from the 6 BQ Compliance Option to a 2 Mg compliance option. Premcor shall consult with EPA and the appropriate Plaintiff-Intervener before making any change in compliance status not expressly prohibited by this Paragraph 126. Any such change must be undertaken in accordance with the regulatory provisions of the Benzene Waste NESHAP.

C. One-Time Review and Verification of Each Refinery's TAB and, as Applicable, Each Refinery's Compliance with the Appropriate Compliance Options

127. On or before June 30, 2008, if Premcor chooses to transition the Port Arthur Refinery, then Premcor shall complete a review and verification of the Refinery's TAB as specified in subparagraphs 128(a) – (d) for the Port Arthur Refinery to determine compliance with the 6 BQ Compliance Option. Premcor shall implement all actions necessary to ensure compliance with the 6 BQ Compliance Option at the Port Arthur Refinery in accordance with Paragraph 125. Notwithstanding any other provisions of this Addendum, if the Port Arthur Refinery is transitioned to the 6BQ Compliance Option, then it shall not be subject to the terms of this Part X applicable to refineries subject to the 6 BQ Compliance Option, nor shall it be subject to the terms of this Part X applicable to refineries subject to a 2 Mg compliance option, prior to Premcor's compliance with this

paragraph. Except as set forth in this paragraph, the provisions of Paragraph 128 shall not apply to the Port Arthur Refinery.

128. Phase One of the Review and Verification Process. By no later than six months from the Date of Lodging, Premcor shall complete a review and verification of each Refinery's TAB to determine compliance with the applicable 2 Mg compliance option for the Port Arthur Refinery, to the extent that it is not transitioned to the 6 BQ Compliance Option, and to determine compliance with the 6BQ Compliance Option for the Lima and Memphis Refineries. For each such Refinery, the review and verification process shall include:

a. an identification of each waste stream that is required to be included in the Refinery's TAB (e.g., slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes);

b. a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream;

c. an analysis of the benzene concentration in each waste stream, using previous analytical data, documented knowledge of the waste streams or new analytical testing data in accordance with 40 C.F.R. § 61.355(c)(2); and

d. an identification of whether or not the stream is controlled consistent with the requirements of Subpart FF.

129. By no later than thirty (30) days following the completion of the review and verification process in Paragraphs 127 and 128, Premcor shall submit a Benzene Waste NESHAP Compliance Review and Verification Report ("BWN Compliance Review and Verification Report") that sets forth the results as identified in (a) through (d) of Paragraph 128. At its option, Premcor may submit one BWN Compliance Review and Verification Report that includes the results of all non-converted

Refineries or may submit separate BWN Compliance Review and Verification Reports for each Refinery.

130. Phase Two of the Review and Verification Process. Based on EPA's review of the BWN Compliance Review and Verification Report(s), EPA may select up to twenty (20) waste streams at each Refinery for sampling for benzene concentration. Premcor will conduct the required sampling and submit the results to EPA within ninety (90) days of receipt of EPA's request. In the event that a stream for which EPA has required sampling is not available for sampling under normal operating conditions within a timeframe that would allow Premcor to satisfy such schedule, then Premcor shall submit sampling results for the subject refinery without the result for the unavailable stream in accordance with the foregoing schedule, and shall supplement the sampling report as soon as practicable after such sampling result becomes available under representative operating conditions.

131. Premcor will use the results of this sampling under Paragraph 130 to recalculate the TAB and the uncontrolled benzene quantity and to amend the relevant BWN Compliance Review and Verification Report, as needed. To the extent that EPA requires Premcor to sample a waste stream previously sampled, Premcor may average the results of all sampling events occurring after January 1, 2001. Premcor shall submit an amended BWN Compliance Review and Verification Report for the relevant Refinery, if necessary, within ninety (90) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA.

D. Implementation of Corrective Actions

132. Amended TAB Reports. If the results of any BWN Compliance Review and Verification Report(s), indicate(s) that a Refinery's most recently-filed TAB report does not accurately reflect the TAB calculation for the Refinery, Premcor shall submit, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), an amended TAB report to the appropriate regulatory authority. The BWN Compliance Review and Verification Report(s) shall be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.

133. Reserved.

134. Corrective Action. If the results of any BWN Compliance Review and Verification Report(s) indicate that Premcor is not in compliance with the applicable 2 Mg compliance option at the Port Arthur Refinery, to the extent that it is not converted to the 6 BQ Compliance Option, or the 6BQ Compliance Option at the Lima or Memphis Refineries or at the Port Arthur Refinery, to the extent converted to the 6 BQ Compliance Option, then Premcor shall submit to EPA, to the appropriate EPA Region, and to the appropriate Plaintiff-Intervener, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), a plan that identifies with specificity the compliance strategy and schedule that Premcor will implement to ensure that the subject Refinery complies with its applicable compliance option, or an alternative compliance option authorized under Subpart FF and Paragraph 126 as soon as practicable.

135. Review and Approval of Plans Any plans submitted pursuant to Paragraph 134 shall be subject to the approval of, disapproval of, or a request for modification by EPA, which shall act, after an opportunity for consultation with the appropriate Plaintiff-Intervener, consistent with the Benzene Waste NESHAP. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, Premcor shall submit to EPA a revised plan that responds to all identified deficiencies. Upon receipt of approval from EPA, Premcor shall commence implementation of the plan according to the schedule approved in the plan. Disputes arising under this Paragraph 135 shall be resolved in accordance with the dispute resolution provisions of this Addendum. Within sixty (60) days of completion of all requirements above, Premcor shall certify to EPA and the appropriate Plaintiff-Intervener that each Refinery is in compliance with the Benzene Waste NESHAP.

E. Carbon Canisters

136. For each of the Premcor Refineries that is subject to the 6 BQ or 2 Mg compliance options control requirements of the Benzene NESHAP, Premcor shall comply with the requirements of

this Section X.E at all locations at such Refineries where a carbon canister(s) is utilized as a control device under the Benzene Waste NESHAP.

137. From the Date of Entry of the Addendum through termination of this Part, Premcor shall not use a single carbon canister for any new units or installations that require control pursuant to the Benzene Waste NESHAP at any Refineries subject to the 6 BQ or 2 Mg compliance options, unless it is technically infeasible or unsafe to use a dual carbon canister system or except as provided for in Paragraphs 138 and 139 for short term installations.

138. For existing carbon canister systems used to control emissions from installations that require control, Premcor shall complete installation of primary and secondary carbon canisters and operate them in series, by no later than 270 days after the Date of Entry of the Addendum. Notwithstanding any other provision of this Part X, Premcor may operate single canisters for short-term operations such as with temporary storage tanks. For all canisters operated for short-term operations as part of a single canister system, "breakthrough" is defined for the purposes of this Decree as any reading of VOCs above background. Beginning no later than the Date of Entry of this Addendum, Premcor shall monitor for breakthrough from a single carbon canister installation no less frequently than on a daily basis.

139. For locations where single canisters are utilized for short term operations, canisters will be replaced when breakthrough is determined within eight (8) hours for canisters with historical replacement intervals of two weeks or less or within twenty-four (24) hours for canisters with a historical replacement interval of more than two weeks. Single carbon canisters can be replaced with a dual system (in series) at any time, provided single canister monitoring is continued until the second canister is installed.

140. By no later than ninety (90) days following the Date of Entry, Premcor shall submit to EPA a report concerning carbon canisters installed pursuant to Subpart FF at the Premcor Refineries. The report shall include the following information for each Refinery:

a. a list of all permanent locations within each Refinery where carbon canisters are installed;

b. the installation date of each secondary canister installed in accordance with Paragraph 138;

c. the date that each secondary canister installed in accordance with Paragraph 138 was put into operation;

d. the identity and location of each engineered carbon canister system, as hereinafter defined;

e. the capacity in pounds of carbon of each engineered carbon canister system; and

f. a list of and supporting justification for each instance in which a dual carbon canister system is not installed because of technical infeasibility or the creation of an unsafe condition at a location otherwise requiring a dual carbon canister system under Paragraph 137.

141. From the Date of Entry and through termination of the Addendum, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 100 ppm VOCs or 5 ppm benzene. In the event that Premcor elects to monitor for both VOCs and benzene pursuant to this provision, then "breakthrough" between the primary and secondary canister shall be defined only as a reading greater than 5 ppm benzene, provided that Premcor satisfies the following conditions:

a. Premcor shall collect and analyze the sample for benzene as soon as practical, and in no event later than 24 hours after obtaining the relevant VOC reading; and

b. Premcor shall conduct monitoring for benzene breakthrough between the primary and secondary carbon canisters for the subject dual carbon canister system until such time as it replaces the relevant primary carbon canister with the secondary carbon canister pursuant to Paragraph 143 according to the following schedule: (i) where the design carbon replacement interval for the unit

is less than or equal to 30 days, Premcor shall monitor every operating weekday; (ii) where the design carbon replacement interval for the unit is 31 to 60 days, Premcor shall monitor at least twice a week; (iii) where the design carbon replacement interval for the unit is greater than sixty (60) days, Premcor shall monitor at least weekly.

142. By no later than seven (7) days after the Date of Entry of the Addendum (for existing dual canister systems), and by no later than seven (7) days after the installation of each new dual canister system, Premcor shall start to monitor for breakthrough between the primary and secondary carbon canisters at times when the source is connected to the carbon canister, and during periods of normal operation in accordance with the frequency specified in 40 C.F.R. § 61.354(d) (but in no event less frequently than once per month), or alternatively at least once on each operating weekday.

143. Premcor shall replace the original secondary carbon canister with a fresh carbon canister immediately when breakthrough between the primary and secondary canister is detected. The original secondary carbon canister will become the new primary carbon canister and the fresh carbon canister will become the secondary canister.

a. For carbon canisters not qualifying as engineered carbon canister systems pursuant to this paragraph, "immediately" shall mean within twenty-four (24) hours; provided, however, that if breakthrough is determined on a Saturday, Sunday, or holiday, then Premcor shall replace the original primary carbon canister by the end of the next regular work day if Premcor begins monitoring the secondary canister at least once per operating day until the primary canister is replaced.

b. For engineered carbon canister systems, "immediately" shall mean not more than fourteen (14) days if Premcor monitors the secondary canister at least once per operating day until the carbon in the primary canister is replaced and such monitoring of the secondary canister does not reveal "breakthrough", as defined in Paragraph 141. If breakthrough from the secondary canister is revealed, Premcor shall replace the secondary carbon canister within twenty-four hours of securing such monitoring results. For purposes of this Paragraph 143, "engineered carbon canister systems"

shall mean carbon systems with fixed vessels for which each vessel has a capacity of carbon in excess of 5000 pounds.

c. In lieu of replacing a primary or secondary carbon canister pursuant to the terms of this paragraph, Premcor may elect to discontinue flow of benzene containing streams to the relevant carbon canister system until such canister is replaced.

144. Premcor shall maintain or otherwise provide for a reasonable supply of fresh carbon and carbon canisters at each of the Premcor Refineries.

145. Records to demonstrate compliance with the requirements of this Section X.E shall be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

F. Annual Program

146. Premcor shall establish an annual program of reviewing process information for each of the Premcor Refineries, including but not limited to construction projects, to ensure that all new benzene waste streams are included in each Refinery's waste stream inventory. Premcor may fulfill this requirement by incorporating new benzene waste stream review into its existing "management of change" program.

G. Laboratory Audits

147. Premcor shall conduct audits, or secure results of audits conducted by parties other than the laboratories, of all laboratories that perform analyses of benzene waste NESHAP samples collected at the Premcor Refineries to ensure that proper analytical and quality assurance/quality control procedures are followed.

148. By no later than one (1) year after the Date of Entry of the Addendum, Premcor shall conduct audits, or secure results of audits conducted by parties other than the laboratories, of the laboratories used by the Premcor Refineries. In addition, Premcor shall audit any new laboratory, or secure results of audits conducted by parties other than the new laboratory, used for analyses of

benzene waste NESHAP samples prior to use of the new laboratory by a Refinery subject to this Addendum.

149. If Premcor has completed audits of any laboratory in the one year period prior to the Date of Entry of the Addendum, additional audits of those laboratories pursuant to Paragraph 148 shall not be required.

150. During the life of this Addendum, Premcor shall conduct subsequent laboratory audits, or secure results of audits conducted by parties other than the laboratories, as provided above, such that each laboratory serving each Premcor Refinery is audited every two (2) years.

151. As stated above, Premcor may retain third parties to conduct these audits or use audits conducted by others as its own, but the responsibility and obligation to ensure compliance with this Addendum and Subpart FF would remain with Premcor.

H. Benzene Spills

152. Premcor shall review all spills reportable under applicable federal and state standards that occur after the Date of Entry of this Addendum within each of the Premcor Refineries to determine if aqueous benzene waste was generated. To the extent required by the Benzene Waste NESHAP regulations and not already in the TAB, Premcor shall include benzene generated by such spills in the TAB. To the extent required by the Benzene Waste NESHAP regulations, Premcor shall include benzene generated by such spills in the uncontrolled benzene quantity calculations for each Refinery.

I. Training

153. By no later than one hundred twenty (120) days from the Date of Entry of the Addendum, Premcor shall develop an annual (i.e., once each calendar year) training program for employees asked to draw benzene waste samples at the Premcor Refineries.

154. For the Premcor Refineries complying with a 2 Mg compliance option or the 6 BQ Compliance Option, by no later than one hundred eighty (180) days from the Date of Entry of the

Addendum, Premcor shall complete the development of standard operating procedures for all control equipment used to comply with the Benzene Waste NESHAP. By no later than two hundred seventy (270) days thereafter, Premcor shall complete an initial training program regarding these procedures for all operators assigned to this equipment. Comparable training shall also be provided to any persons who subsequently become operators, prior to their assumption of this duty. Until termination of this Decree, "refresher" training in these procedures shall be performed on at least a three year cycle.

155. Reserved.

156. If Premcor converts the Port Arthur Refinery to the 6BQ Compliance Option, then the Port Arthur Refinery shall comply with the provisions of Paragraph 154 by June 30, 2008.

157. As part of Premcor's training programs, Premcor must require any contractor hired to perform all or part of the requirements of this Part X to properly train its employees to implement the relevant provisions of this Part X.

J. Waste/Slop/Off-Spec Oil Management

158. For each of the Premcor Refineries subject to this Addendum, Premcor shall develop, similar to those in Appendix G in the Consent Decree, a schematic reflecting the movements of waste/slop/off-spec oil streams within each Refinery and shall provide this schematic to EPA on or before the June 30, 2007. Premcor will then certify to the best of its knowledge following reasonable inquiry, that these schematics accurately: depict the waste management units (including sewers) located at the Premcor Refineries upon the date of submittal under this paragraph that handle, store and transfer waste/slop/off-spec oil streams; identify the control status of each waste management unit; and show how such oil is transferred within each Refinery. To the extent that Premcor and EPA determine that any change to a Refinery subject to this Addendum necessitates a revision to a schematic, then Premcor shall update such schematic.

159. Organic Benzene Waste Streams. Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, or in accordance with any compliance strategy approved

by EPA pursuant to Paragraph 135, Premcor shall ensure that all waste management units handling "organic" benzene wastes, as defined in Subpart FF, shall meet any control standards applicable to such units under Subpart FF.

160. Aqueous Benzene Waste Streams. Except as otherwise provided by Subpart FF, for purposes of calculating the TAB at each of the Premcor Refineries pursuant to the requirements of 40 C.F.R. § 61.342(a), Premcor shall include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). For purposes of complying with a 2 Mg or 6 BQ compliance option, to the extent required by Subpart FF, all waste management units handling aqueous benzene waste streams shall either meet the applicable control standards of Subpart FF or shall have their uncontrolled benzene quantity count toward the applicable 2 or 6 megagram limit.

161. Recordkeeping. For each of the Premcor Refineries, Premcor shall maintain records quantifying waste/slop/off-spec oil movements for all benzene waste streams.

162. Disputes under this Section X.J shall be resolved in accordance with the dispute resolution provisions of this Addendum.

K. End of Line Sampling

163. The provisions of this Section X.K shall apply to the Premcor Refineries from the Date of Entry through termination of this Part.

164. Valero developed and EPA approved representative end-of-line sampling ("EOL") plans, within Appendix G of the Consent Decree, designed to determine the benzene quantity in uncontrolled waste streams, including sampling locations and methods for flow calculations to be used in quarterly EOL benzene determinations. By June 30, 2007, Premcor shall develop and submit to EPA EOL Plans similar to the EOL plans submitted pursuant to the Consent Decree. EPA shall approve the EOL Plan for each Premcor Refinery provided such plans are consistent with the representative EOL Plans in Appendix G to the Consent Decree.

165. Commencing with the third calendar quarter 2007, Premcor shall conduct quarterly EOL sampling for benzene quantities in uncontrolled waste streams at the Premcor Refineries according to each proposed and/or approved EOL Plan.

166. Once an EOL Plan is approved by EPA, if changes in processes, operations, or other factors cause the approved sampling locations and approved methods for determining flow calculations to no longer provide an accurate measure of a Refinery's EOL benzene quantity, Premcor shall submit a revised EOL Plan to EPA for approval. Any changes to a EOL Plan made by Premcor prior to EPA approval of the original Plan shall be submitted as a revised proposed Plan and may be implemented thereafter.

167. Premcor shall use all sampling results and approved flow calculation methods under the approved sampling plans referenced in Paragraph 164 to calculate a quarterly and estimate a calendar year value for each of the Premcor Refineries. If the quarterly calculation for a refinery made pursuant to this paragraph exceeds (a) 2.5 Mg for a refinery with TAB historically less than 10 Mg/yr, (b) 0.5 Mg for a refinery complying with a 2 Mg compliance option, or (c) 1.5 Mg for a refinery complying with the 6 BQ Compliance Option, but Premcor estimates that the annual benzene quantity for such refinery will remain below the referenced annual quantity, then Premcor shall include within its next report under Paragraphs 176 or 178 comments justifying why, notwithstanding the quarterly calculation, Premcor estimates that the annual benzene quantity will not exceed the applicable level listed above.

168. If any estimated annual benzene calculation for any facility made pursuant to the proceeding paragraph exceeds (a) 2 Mg for a refinery complying with a 2 Mg compliance option, or (b) 6 Mg for a refinery complying with the 6 BQ Compliance Option, then Premcor shall prepare for each such refinery a written summary and schedule of the activities planned to minimize benzene waste at such refinery to ensure that it complies with the Benzene Waste Operations NESHAP. (The estimated annual values in and of themselves, are not the basis for penalties and are not deemed to be

instances of non-compliance for purpose of this Addendum.) The summary and schedule are due no later than sixty (60) days after the close of the quarter in which the estimated annual value exceeds the applicable quantity (the "TAB Study and Compliance Review").

169. Reserved.

170. Premcor shall maintain records supporting its quarterly calculations of EOL quantities, including the methodology and data used to identify and calculate flow until termination of the obligations of this Part.

L. Miscellaneous Measures

171. For the Premcor Refineries that have a TAB greater than 10 Mg/yr, Premcor shall manage all groundwater remediation conveyance systems in accordance with, and to the extent required by, the Benzene Waste NESHAP, 40 C.F.R. § 61.342. In accordance with 40 C.F.R. § 61.342, Premcor may exclude from the calculation of a Refinery's TAB the benzene concentration in any waste generated by remediation activities conducted at such Refinery.

172. From the first calendar quarter commencing after the Date of Entry through termination of the Addendum, each Premcor Refinery subject to this Addendum shall:

a. Conduct monthly visual inspections of all water traps within the Refinery's individual drain systems that are controlled under the Benzene Waste NESHAP;

b. Identify and mark all area drains that are segregated stormwater drains;

c. Where installed pursuant to Subpart FF, visually monitor all conservation vents or indicators on process sewers for detectable leaks on a weekly basis and reset any vents where leaks are detected. After two (2) years of weekly inspections, and based upon an evaluation of the recorded results, Premcor may submit a request to the appropriate EPA Region to modify the frequency of the inspections. EPA shall not unreasonably withhold its consent. Nothing in this subparagraph shall require Premcor to monitor conservation vents on fixed roof tanks; and

d. Conduct quarterly monitoring, in accordance with the "no detectable emissions" provision in 40 C.F.R. § 61.347, of oil-water separators controlled in accordance with 40 C.F.R. § 61.347.

173. Reserved.

174. Notwithstanding any other provision in this Addendum or its required sampling, Premcor shall account for and include in the TAB all slop oil recovered from its oil/water separators or sewer systems until recycled or put into a feed tank in accordance with, and only to the extent required by 40 C.F.R. § 61.342(a). In no event shall the benzene content in slop oil be counted more than once towards a facility's TAB calculation.

M. Recordkeeping and Reporting Requirements for this Part

175. In addition to the Reports Required under 40 C.F.R. § 61.357. At the times specified in the applicable provisions of this part, Premcor shall submit for the Premcor Refineries the following reports to EPA, to the applicable EPA Region, and to the applicable Plaintiff-Intervener:

a. BWN Compliance Review and Verification Report (¶129), as amended, if necessary (¶131);

b. Amended TAB Report, if necessary (¶132);

c. Plan(s) to comply with Subpart FF, if any BWN Compliance Review and Verification Reports, indicate non-compliance (¶134);

d. Report concerning carbon canister systems (¶140); and

e. TAB Study and Compliance Review, if necessary (¶168).

176. In Conjunction with the Reports Required under 40 C.F.R. § 61.357 For each Refinery for which Premcor is required, pursuant to 40 C.F.R. §§ 61.357(d)(6) and (7), to submit quarterly reports ("Section 61.357 Reports"), Premcor shall include the following additional information in the subject Section 61.357 Reports for such Refinery:

i. Laboratory Audits. Once laboratory audits are required to have been conducted pursuant to the provisions of Section X.G., Premcor shall identify, in each Section 61.357 Report submitted thereafter until termination of this Addendum, all laboratory audits completed for such Refinery pursuant to the provisions of Section X.G during the calendar quarter for which the quarterly report is due. Premcor shall include the identification of each laboratory audited, a description of the methods used in the audit, and a summary of the results of the audit.

ii. Training. Once Premcor is required to have conducted training at its Refinery pursuant to Section X.I., Premcor shall describe, in each Section 61.357 Report submitted thereafter until termination of this Addendum, the measures that it took to comply with the training provisions of Section X.I for such Refinery, starting from the Date of Entry of the Addendum;

iii. EOL Sampling Results. Once EOL sampling is required under Section X.K, Premcor shall report the results of the quarterly EOL sampling undertaken at such Refinery pursuant to Section X.K for the calendar quarter. The report shall include a list of all waste streams sampled at such Refinery, the results of the benzene analysis for each sample, the computation of the EOL benzene quantity for the quarter and any other related information required by any plan approved for such Refinery pursuant to Paragraph 164.

177. Reserved.

178. For each Refinery for which Premcor determines a TAB level of less than 10 mg/yr (and for which Premcor is not required to submit a Section 61.357 Report), Premcor shall submit a progress report as part of the report required by Part XVI. For each semi-annual period, Premcor shall submit for such Refinery the information described in Paragraphs 176(i)-(ii), and the following information:

i. The results of the quarterly EOL sampling undertaken pursuant to Paragraphs 164 - 167.

ii. A list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the EOL benzene quantity for the respective quarters.

iii. An identification, for each Refinery, of whether the quarterly benzene quantity equals or exceeds 2.5 Mg/yr and whether the projected calendar year benzene quantity equals or exceeds 10 Mg/yr. If either condition is met, Premcor shall include in the Progress Report a plan or determination, if required pursuant to Paragraphs 167 and 168.

179. – 180. Reserved.

N. Agencies to Receive Reports, Plans and Certifications Required in the paragraph; Number of Copies

181. Unless otherwise specified in this Part, Premcor shall submit all reports, plans and certifications required to be submitted under this Part X to EPA, the appropriate EPA Region and the applicable Plaintiff-Intervener. For each submission, Premcor shall submit two copies to EPA, two copies to the appropriate EPA Region and two copies to the appropriate Plaintiff-Intervener. By agreement between Premcor and each of the offices that are to receive the materials in this Part X, Premcor may submit the materials electronically.

XI. LEAK DETECTION AND REPAIR ("LDAR") PROGRAM ENHANCEMENTS

Program Summary: Premcor shall undertake at each Premcor Refinery the following measures to enhance each Refinery's LDAR program and minimize or eliminate fugitive emissions from valves and pumps in light liquid and/or in gas/vapor service.

A. Introduction

182. In order to minimize or eliminate fugitive emissions of volatile organic compounds ("VOCs"), benzene, volatile hazardous air pollutants ("VHAPs"), and organic hazardous air pollutants ("HAPs") from valves and pumps in light liquid and/or in gas/vapor service, Premcor shall undertake

at each of the Premcor Refineries the enhancements of this Part XI to each Refinery's LDAR program under Title 40 of the Code of Federal Regulations, Part 60, Subparts VV and GGG; Part 61, Subparts J and V; Part 63, Subparts F, H, and CC; and applicable state and local LDAR requirements that are federally enforceable or implemented by participating Plaintiff-Interveners (collectively, the "LDAR Regulations"). The terms "in light liquid service" and "in gas/vapor service" shall have the definitions set forth in the applicable provisions of the LDAR Regulations.

183. Reserved.

184. For purposes of this Part XI, "Equipment" shall mean pumps and valves in light liquid or gaseous service at the refineries subject to this Addendum, except for those pumps and valves exempt from standard monitoring frequencies under applicable LDAR Regulations.

B. <u>Written Refinery-Wide LDAR Program</u>

185. By no later than June 30, 2007, Premcor shall develop and maintain, for each Premcor Refinery, a written, Refinery-wide program for compliance by such Refinery with applicable LDAR Regulations. Until termination of this Decree, Premcor shall implement these programs at each Premcor Refinery on a Refinery-wide basis, and shall update each refinery's program as necessary to ensure continuing compliance. Each Refinery-wide program shall include:

1. An overall, Refinery-wide leak rate goal that will be a target for achievement on a process-unit-by-process-unit basis. For purposes of this provision, the overall Refinery-wide leak rate goal shall constitute a tool for implementation of the Refinery-wide program, but shall not be enforceable or subject to stipulated penalties under Part XX;
2. Identification of all Equipment that has the potential to leak VOCs, HAPs, VHAPs, and benzene within process units that are owned and maintained by each Refinery;

3. Procedures for identifying leaking Equipment within process units that are owned and maintained by each Refinery;

4. Procedures for repairing and keeping track of leaking Equipment;

5. Procedures for identifying and including in the LDAR program new Equipment; and

6. A process for evaluating new and replacement Equipment to promote consideration and installation of equipment that will minimize leaks and/or eliminate chronic leakers.

C. Training

186. By no later than June 30, 2007, Premcor shall implement the following training programs at each of the Refineries:

1. For personnel newly-assigned to LDAR responsibilities, require LDAR training prior to each employee beginning such work;

2. For all personnel with assigned LDAR responsibilities, provide and require completion of annual LDAR training; and

3. For all other Refinery operations and maintenance personnel (including contract personnel), provide and commence implementation of an initial training program, with completion within six (6) months thereafter, that includes instruction on aspects of LDAR if and to the extent that aspects of LDAR are relevant to the person's duties.

4. Until termination of this Decree, perform "refresher" training in LDAR on a three year cycle.

D. LDAR Audits

187. Premcor shall undertake at each of the Premcor Refineries the Refinery-wide audits set forth in Paragraphs 188 and 189, to help ensure each Refinery's compliance with all applicable LDAR

requirements. Premcor's LDAR audits shall include comparative monitoring of valves and pumps, records review to ensure monitoring and repairs for valves and pumps were completed as required, tagging review, data management review, and observation of the LDAR technicians' calibration and monitoring techniques.

188. Third-Party Audits. Premcor shall conduct a third-party audit of each Refinery's LDAR program at least once every four years. For purposes of this requirement, "third party" may include a qualified contractor, consultant, industry group, or trade association. The first third-party audit shall be completed no later than one year from the Date of Entry of the Addendum. During the period between the Date of Entry and the date of the first audit for each refinery under this Section, Premcor shall make reasonable efforts to ensure compliance with the requirements of this Addendum and all applicable LDAR regulations.

189. Internal Audits. Premcor shall conduct internal audits of each of the Premcor Refineries' LDAR programs by sending Premcor or Valero personnel familiar with the LDAR program and its requirements to audit a Premcor Refinery. Premcor shall complete the first round of these internal LDAR audits by no later than two years from the date of completion of the first round of third-party audits required in Paragraph 188. Internal audits of each Refinery shall be held every four years thereafter for the life of this Addendum.

190. Frequency. To ensure that an audit at each Refinery subject to this Addendum occurs every two years, third-party and internal audits shall be separated by approximately two years after the initial Third Party Audit.

191. Alternative. As an alternative to the internal audits required by Paragraph 189, Premcor may elect to retain third-parties to undertake one or more of these audits, provided that an audit of each Refinery occurs every two (2) years.

E. Implementation of Actions Necessary to Correct Non-Compliance

192. If the results of any of the audits conducted pursuant to Section XI.D at any of the Premcor Refineries identify any areas of non-compliance with the LDAR Regulations, Premcor shall implement, as soon as practicable, all appropriate steps necessary to correct the area(s) of non-compliance, and to prevent, to the extent practicable, a recurrence of the cause(s) of the non-compliance. In the Semiannual LDAR Report submitted pursuant to the provisions of Section XI.R covering the period when an audit was conducted, Premcor shall certify to EPA that the audit has been completed and that the refinery is in compliance or on a compliance schedule**.**

F. Retention of Audit Reports

193. Until termination of the Addendum, Premcor shall retain the audit reports generated pursuant to Section XI.D and shall maintain a written record of the corrective actions taken at each of its Refineries in response to any deficiencies identified in any audits. In the Semiannual LDAR Report submitted pursuant to the provisions of Section XI.R covering the period when an audit was conducted pursuant to Section XI.D, Premcor shall submit the audit reports and corrective action records for audits performed and actions taken during the previous semiannual period.

G. Internal Leak Definition for Valves and Pumps

194. Premcor shall utilize the following internal leak definitions for Equipment covered by an applicable LDAR program at the Premcor Refineries, unless a lower leak definition is established for the relevant Refinery under applicable permit(s) or applicable state LDAR Regulations.

195. Leak Definition for Valves. Two years from the Date of Entry, Premcor shall utilize an internal leak definition of 500 ppm VOCs for refinery valves qualifying as Equipment at the Lima and Memphis Refineries. At the Date of Entry of the Addendum, the Port Arthur Refinery shall utilize an internal leak definition of 500 ppm VOCs for refinery valves qualifying as Equipment.

196. Leak Definition for Pumps. Two years from the Date of Entry, Premcor shall utilize an internal leak definition of 2000 ppm for refinery pumps qualifying as Equipment at the Memphis and

Lima Refineries. At the Date of Entry, the Port Arthur Refinery shall utilize an internal leak definition of 2000 ppm for refinery pumps qualifying as Equipment.

H. Reporting, Recording, Tracking, Repairing and Remonitoring Leaks of Valves and Pumps Based on the Internal Leak Definitions

197. Reporting. For regulatory reporting purposes, Premcor may continue to report leak rates in valves and pumps against the applicable regulatory leak definition, or may use the lower, internal leak definitions specified in Paragraphs 195 and/or 196.

198. Recording, Tracking, Repairing and Remonitoring Leaks. Premcor shall record, track, repair and remonitor all leaks in excess of the internal leak definitions of Paragraphs 195 and 196 (at such time as those definitions become applicable) in accordance with applicable provisions of the LDAR Regulations, except that Premcor shall have five (5) days to make an initial attempt at repair and thirty (30) days either to make final repairs and remonitor leaks that are greater than the internal leak definitions but less than the applicable regulatory leak definitions or to place the valve on the delay of repair list according to Section XI.Q.

I. Initial Attempt at Repair on Valves

199. Beginning no later than ninety (90) days after the Date of Entry of this Addendum, Premcor shall make an "initial attempt" at repair on any valve qualifying as Equipment under Paragraph 184 that has a reading greater than 200 ppm of VOCs, for the life of the Addendum, excluding control valves, orbit valves and other valves that LDAR personnel are not authorized to repair. Premcor or its designated contractor, as applicable, shall make this "initial attempt" and remonitor such valves within five (5) calendar days of identification. Unless the remonitored leak rate is greater than the applicable leak definition, no further action will be necessary.

J. LDAR Monitoring Frequency

200. Pumps. When the lower leak definition for pumps becomes applicable pursuant to Paragraph 196, Premcor shall monitor pumps qualifying as Equipment at the lower leak definition on a monthly basis.

201. Valves. When the lower leak definition for valves becomes applicable pursuant to Paragraph 195, Premcor shall monitor valves qualifying as Equipment in accordance with one of the following options on a process unit-by-process unit basis:

a. Quarterly monitoring with no ability to skip periods. This option cannot be chosen for process units subject to the HON or the modified-HON option in the Refinery MACT; or

b. Sustainable skip period program (see attached Appendix I). Previous process unit monitoring results may be used to determine the initial skip period interval provided that each valve has been monitored using the 500 ppm leak definition. Process units monitored in the skip period alternative method may not revert to quarterly monitoring if the most recent monitoring period demonstrates that more than two percent of the valves were found leaking under the internal leak definition.

202. Reserved.

203. For process units complying with the sustainable skip period program set forth in Paragraph 201(b), EPA or the relevant state Intervener agency may require Premcor to implement more frequent monitoring of valves qualifying as Equipment, in accordance with the monitoring frequencies specified in the skip period provisions identified in Appendix I, if the leak rate determined during an EPA or relevant Plaintiff-Intervener inspection demonstrates that more frequent monitoring is appropriate. In evaluating whether the leak rate demonstrates that more frequent monitoring of valves is appropriate, EPA or the relevant Plaintiff-Intervener, as applicable, will determine the leak rate utilizing data generated in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21, and based on the total number of valves in the process unit, rather than the total number of valves monitored during the inspection.

204. Premcor shall have the option of monitoring affected valves and pumps within process units after completing a documented maintenance, startup or shutdown activity without having the

results of the monitoring count as a scheduled monitoring activity, provided that Premcor monitors according to the following schedule:

a. Event involving 1,000 or fewer affected valves and pumps – monitor within one (1) week of the documented maintenance, startup or shutdown activity;

b. Event involving greater than 1,000 but fewer than 5,000 affected valves and pumps – monitor within two (2) weeks of the documented maintenance, startup or shutdown activity; and

c. Event involving greater than 5,000 affected valves and pumps – monitor within four (4) weeks of the documented maintenance, startup or shutdown activity.

K. Electronic Monitoring, Storing, and Reporting of LDAR Data

205. Electronic Storing and Reporting of LDAR Data. For each of the Premcor Refineries, Premcor has and will continue to maintain an electronic database for storing and reporting LDAR data.

206. Electronic Data Collection During LDAR Monitoring. By no later than June 30, 2007, Premcor shall use dataloggers and/or electronic data collection devices during all LDAR monitoring required by this decree. Premcor, or its third party contractor(s), shall use its best efforts to transfer, on a daily basis, electronic data from electronic datalogging devices to the electronic database required pursuant to Paragraph 205. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include a time and date stamp, operator identification, and instrument identification. Premcor may use paper logs where necessary or more feasible (e.g., small rounds, remonitoring, or when dataloggers are not available or broken), and shall record the identification of the technician undertaking the monitoring, the date, time, and the identification of the monitoring equipment. Premcor shall transfer any manually recorded monitoring data to the electronic database within seven (7) days of monitoring.

L. QA/QC of LDAR Data

207. By no later than ninety (90) days after the Date of Entry of this Addendum, Premcor or its third party contractor(s) shall develop and implement a procedure to ensure a quality assurance/quality control ("QA/QC") review of all data generated by LDAR monitoring technicians. This QA/QC procedure shall include procedures for:

1. Monitoring technician(s) reviewing the monitoring data daily;
2. Quarterly performing a QA/QC review of Premcor's and any third party contractor's monitoring data which shall include, but not be limited to: number of components monitored per technician, time between monitoring events, and abnormal data patterns.

M. LDAR Personnel

208. By no later than the Date of Entry of the Addendum, Premcor shall establish a program for the Premcor Refineries that will hold LDAR personnel accountable for LDAR performance at each Refinery. Premcor shall maintain a position within each Refinery with responsibility for LDAR management and with the authority to implement improvements.

N. Adding New Valves and Pumps

209. By no later than one (1) year from the Date of Entry, Premcor shall establish a tracking program for maintenance records (e.g., a Management of Change program) to ensure that valves and pumps qualifying as Equipment added to each Refinery during maintenance and construction are integrated into the LDAR program.

O. Calibration/Calibration Drift Assessment

210. Calibration. Premcor shall conduct all calibrations of LDAR monitoring equipment using methane as the calibration gas, in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21.

211. Calibration Drift Assessment. Beginning no later than sixty (60) days from the Date of Entry of this Addendum, Premcor shall conduct calibration drift assessments of LDAR monitoring

equipment at the end of each monitoring shift, at a minimum. Premcor shall conduct the calibration drift assessment using, at a minimum, a 500 ppm calibration gas. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, Premcor shall remonitor all valves at such Refinery qualifying as Equipment that were monitored since the last calibration and that had a reading greater than 100 ppm and all pumps at such Refinery qualifying as Equipment that were monitored since the last calibration and that had a reading greater than 500 ppm.

P. Chronic Leakers

212. Premcor shall replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification. A component shall be classified as a "chronic leaker" under this paragraph if it leaks above 10,000 ppm twice in any consecutive four quarters, unless the component had not leaked in the twelve (12) consecutive quarters immediately prior to the relevant process unit turnaround.

Q. Delay of Repair

213. Beginning no later than sixty (60) days from the Date of Entry of the Addendum, for any valves or pumps qualifying as Equipment for which Premcor is allowed under the applicable LDAR Regulations to place on the "delay of repair" list, Premcor shall satisfy the following requirements. Nothing in this provision is intended to limit Premcor's ability to isolate a valve or pump rather than placing it on the "delay of repair" list, to the extent authorized under applicable LDAR Regulations.

a. For all valves or pumps:

1. Require sign-off by the unit supervisor that the valve or pump is technically infeasible to repair without a process unit shutdown, to the extent that the valve or pump is being placed on the "delay of repair" list for that reason; and

2. Include valves and pumps that are placed on the "delay of repair" list in regular LDAR monitoring.

b. For valves: For valves, other than control valves, qualifying as Equipment leaking at a rate of 10,000 ppm or greater, require use of a "drill and tap**"** or equivalent method for fixing such leaking valves, rather than placing the valve on the "delay of repair" list, unless Premcor can demonstrate that there is a safety, mechanical, or adverse environmental concern posed by attempting to repair the leak in this manner. Premcor shall perform the first "drill and tap" (or equivalent repair method) within fifteen (15) days, and a second attempt (if necessary) within thirty (30) days after the leak is detected. After two unsuccessful attempts to repair a leaking valve through the drill and tap method, Premcor may place the leaking valve on its "delay of repair" list. If a new method develops for repairing such valves, Premcor will advise EPA prior to implementing the use of such new method in place of drill and tap for repairs required under this Addendum.

R. Recordkeeping and Reporting Requirements for this Part

214. In addition to the Reports Required under 40 C.F.R. § 60.487 and § 63.654.

a. Written Refinery-Wide LDAR Program. No later than July 31, 2007, Premcor shall submit a copy of each of the Premcor Refineries' Written Refinery-Wide LDAR Programs developed pursuant to Paragraph 185 to EPA, the appropriate EPA Region, and the appropriate Plaintiff-Intervener agency.

b. Certification of Use of Electronic Data Collection during LDAR Monitoring. No later than July 31, 2007, Premcor shall certify that it utilizes at all of the Premcor Refineries electronic data collection devices during LDAR monitoring, pursuant to the requirements of Paragraph 206.

215. As part of the Reports Required under 40 C.F.R. § 60.487 and § 63.654 (Semi-Annual LDAR Report) Premcor shall submit, for the Premcor Refineries, the following information, at the following times:

a. First Semiannual LDAR Report Due under the Addendum. Premcor shall include the following as part of its report(s), as applicable:

i. A certification of the implementation of the "initial attempt at repair" program of Paragraph 199;

ii. A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 207;

iii. An identification of the individual, by name or title, at each Refinery responsible for LDAR performance as required by Paragraph 208;

iv. A certification of the development of a tracking program for new valves and pumps added during maintenance and construction (Management of Change Program) as required by Paragraph 209;

v. A certification of the implementation of the calibration and calibration drift assessment procedures of Paragraphs 210 and 211;

vi. A certification of the implementation of the "chronic leaker" and "delay of repair" procedures of Paragraphs 212 and 213; and

vii. A copy of each refinery's written refinery-wide LDAR program under Paragraph 185.

b. Until termination of this Part XI of the Addendum, Premcor shall include the following information in the Semiannual LDAR Reports:

i. An identification of each audit, if any, that was conducted pursuant to the requirements of Section XI.D. in the previous semiannual period at each of the Premcor Refineries. For each audit identified, the report shall

include an identification of the auditors, a summary of the audit results, and a summary of the actions that Premcor took or intends to take to correct all deficiencies identified in the audits.

ii. Training. Information identifying the measures taken to comply with the provisions of Paragraph 186; and

iii. Monitoring. The following information on LDAR monitoring:

(a) a list of the process units monitored during the reporting period;

(b) the number of valves and pumps present in each monitored process unit;

(c) the number of valves and pumps monitored in each process unit;

(d) the number of valves and pumps found leaking;

(e) the number of "difficult to monitor" pieces of equipment monitored;

(f) the projected month of the next monitoring event for that unit;

(g) a list of all pumps and valves currently on the "delay of repair" list, the date each component was placed on the list, the date each such component was determined to be leaking at a rate greater than 10,000 ppm, the date each drill and tap or equivalent method of repair, its associated monitoring results and whether such activities were completed in a timely manner under Paragraph 213;

(h) a list of all initial attempts/remonitoring that did not occur in a timely manner under Paragraph 199;

(i) the number of missed or untimely repairs under Paragraph 198; and

(j) the number of missed or untimely repairs under Paragraphs 212 and 213.

S. Agencies to Receive Reports, Plans and Certification Required in this Part XI: Number of Copies

216. Reserved.

217. Unless otherwise specified in this Part XI, Premcor shall submit all reports, plans and certifications required to be submitted under this Part XI to EPA and to the appropriate EPA Region and Plaintiff-Intervener. For each submission, Premcor shall submit one copy to EPA, two copies to the appropriate EPA Region and two copies to the appropriate Plaintiff-Intervener. By agreement between Premcor and each of the offices that are to receive the materials in this Part XI, Premcor may submit the materials electronically.

T. Excluded Equipment.

218. Notwithstanding anything to the contrary in this Part XI, the LDAR program shall not apply to valves and pumps exempt under the LDAR Regulations, including but not limited to: pressure relief devices, valves on closed vent systems, valves in vacuum service, leakless valves, and pumps with no mechanism to leak (e.g. canned and mag pumps). In addition, nothing in this Addendum is intended to require Premcor to monitor difficult-to-monitor valves or unsafe-to-monitor valves more frequently than is otherwise required under the LDAR Regulations.

U. New Monitoring Technologies.

219. In the event that EPA adopts new monitoring technologies (such as infrared imaging) into its LDAR regulations in the future, Premcor may request a modification to this Part XI to take advantage of such new regulations. EPA, after an opportunity for consultation with appropriate Plaintiff-Interveners, may approve a change to part or all of this Part XI to take advantage of the new leak detection technology. Such a revised protocol must be developed and mutually agreed upon in writing by EPA and Premcor in accordance with Paragraph 381 [Modification].

XII. PROGRAM ENHANCEMENTS RE: NSPS SUBPARTS A AND J SO_2 EMISSIONS FROM CLAUS SULFUR RECOVERY PLANTS ("SRP") AND FLARING

Program Summary: Beginning immediately upon the lodging of this Addendum, Premcor agrees to take the following measures at all of its SRPs and certain flaring devices at the Premcor Refineries. Premcor will install additional equipment at certain refineries to achieve additional SO_2 emission reductions and further reduce flaring incidents. Premcor will implement procedures for root cause analysis of acid gas and hydrocarbon flaring incidents and tail gas incidents at all refineries.

A. DEFINITIONS

220. Unless otherwise expressly provided herein, terms used in this Part shall be interpreted as defined in the Clean Air Act, 42 U.S.C. § 7401 et seq., and the applicable regulations promulgated thereunder. In addition, the following definitions shall apply, for purposes of this Addendum, to the terms contained within this Part of this Addendum:

(1) "Acid Gas" (AG) shall mean any gas that contains hydrogen sulfide and is generated at a refinery by the regeneration of an amine scrubber solution;

(2) "AG Flaring" shall mean, for purposes of this Addendum, the combustion of Acid Gas and/or Sour Water Stripper Gas in an AG Flaring Device. Nothing in this definition shall be construed to modify, limit, or affect EPA's authority to regulate the flaring of gases that do not fall within the definitions contained in this Addendum of Acid Gas or Sour Water Stripper Gas.

(3) "AG Flaring Device" shall mean any device at a refinery that is used for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, except facilities in which gases are combusted to produce elemental sulfur, sulfuric acid or ammonium thiosulfate. The combustion of Acid Gas and/or Sour Water Stripper Gas occurs in AG Flaring Devices identified in Appendix K. To the extent that the refinery utilizes AG Flaring Devices other than those identified in Appendix K for purposes of combusting Acid Gas and/or Sour Water Stripper Gas, those Flaring Devices shall be considered AG Flaring Devices under this Addendum.

(4) "AG Flaring Incident" shall mean the continuous or intermittent flaring/combustion of Acid Gas and/or Sour Water Stripper Gas in an AG Flaring Device that results in the emission of sulfur dioxide equal to, or greater than five hundred (500) pounds in a twenty-four (24) hour period; provided, however, that if five hundred (500) pounds or more of sulfur dioxide have been emitted in a twenty-four (24) hour period and flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to, or in excess of five hundred (500) pounds of sulfur dioxide, then only one AG Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of flaring within the AG Flaring Incident.

(5) "Day" shall mean a calendar day.

(6) "Hydrocarbon Flaring" shall mean, for purposes of this Addendum, the flaring of refinery hydrocarbon process gases, except for Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, in a Hydrocarbon Flaring Device. Nothing in this definition shall be construed to modify, limit, or affect EPA's authority to regulate the flaring of gases that do not fall within the definitions contained in this Addendum.

(7) "Hydrocarbon Flaring Device" shall mean a flare device listed in Appendix N. Premcor shall provide notice to EPA, within the next report to be submitted pursuant to Part XVI, of any new Hydrocarbon Flaring Device which is installed at a Premcor Refinery subsequent to the Date of Entry of this Addendum. To the extent that a Premcor Refinery utilizes a Hydrocarbon Flaring Device other than those specified in Appendix N for the purposes of combusting any excess of a refinery-generated gas other than Acid Gas and/or Sour Water Stripper Gas, such Hydrocarbon Flaring Device shall be covered under this Addendum.

(8) "Hydrocarbon Flaring Incident" or HC Flaring Incident, shall mean continuous or intermittent Hydrocarbon Flaring, at a Hydrocarbon Flaring Device that results in the emission of sulfur dioxide equal to, or greater than five hundred (500) pounds in a 24-hour period; provided, however, that if five hundred (500) pounds or more of sulfur dioxide have been emitted in a twenty-four (24) hour period and flaring continues into subsequent, contiguous, non-overlapping twenty-four (24) hour period(s), each period of which results in emissions equal to, or in excess of five-hundred (500) pounds of sulfur dioxide, then only one HC Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of Flaring within the HC Flaring Incident.

(9) "Malfunction" shall mean any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(10) "Root Cause" shall mean the primary cause or causes of a AG or HC Flaring Incident or of a Tail Gas Incident as determined through a process of investigation.

(11) "Scheduled Maintenance" of an SRP shall mean any shutdown of an SRP that Premcor schedules at least fourteen (14) days in advance of the shutdown for the purpose of undertaking maintenance of that SRP.

(12) "Shutdown" shall mean the cessation of operation of an affected facility for any purpose.

(13) "Sour Water Stripper Gas" or "SWS Gas" shall mean the gas produced by the process of stripping or scrubbing refinery sour water.

(14) "Startup" shall mean the setting in operation of an affected facility for any purpose.

(15) "Sulfur Recovery Plant" or "SRP" shall mean a process unit that recovers sulfur from hydrogen sulfide by a vapor phase catalytic reaction of sulfur dioxide and hydrogen sulfide.

(16) "Tail Gas" shall mean exhaust gas from the Claus trains and the tail gas treating unit ("TGTU") section of the SRP.

(17) "Tail Gas Incident" shall mean the combustion of Tail Gas that:

a. is combusted in a flare that results in five hundred (500) pounds of sulfur dioxide emissions in a twenty-four (24) hour period; or

b. is combusted in a thermal incinerator and results in excess emissions of 500 pounds or more of SO_2 in any 24-hour period. Only those time periods which are in excess of a SO_2 concentration of 250 ppm (rolling 12-hour average) shall be used to determine the amount of excess SO_2 emissions from the incinerator; provided, however, that during periods of maintenance of a monitored incinerator, a Tail Gas Incident shall mean the combustion of Tail Gas in a combustion device other than a monitored incinerator where the amount of sulfur dioxide emissions in excess of 250 ppm on a twenty-four (24) hour period exceeds five hundred (500) pounds, calculated based upon best engineering judgment.

c. Reserved

(18) "Upstream Process Units" shall mean all amine contactors, amine scrubbers, and sour water strippers at the refinery, as well as all process units at the refinery that produce gaseous or aqueous waste streams that are processed at amine contactors, amine scrubbers, or sour water strippers.

(19) "Flaring Device" shall mean an Acid Gas Flaring Device and/or Hydrocarbon Flaring Device.

B. SRP NSPS Subparts A And J Applicability

221. Upon the Date of Entry, the SRPs at the Premcor Refineries shall be "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with the applicable provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to SRPs. For emission unit P025 at the Lima Refinery, Premcor shall certify compliance with the applicable provisions of 40 C.F.R. Part 60, Subpart J, to EPA and the applicable Plaintiff Intervenor by no later than April 1, 2008.

222. The SRPs at the Premcor Refineries are as follows:

Refinery	SRP	Claus Train	NSPS J Date
Memphis	Memphis SRP	Claus #1	Date of Entry
		Claus #2	Date of Entry
Lima	Lima SRP	Claus #1	Date of Entry
		Claus #2	Date of Entry
Port Arthur	Port Arthur SRP	543 100 Train	Date of Entry
		543 300 Train	Date of Entry
		544 500 Train	Date of Entry
		544 400 Train	Date of Entry
		545 100 Train	Date of Entry
		545 200 Train	Date of Entry
		546 600 Train	Date of Entry
		546 700 Train	Date of Entry

223. Reserved.

224. Upon the Date of Entry, all emission points (stacks) to the atmosphere for tail gas emissions from each of its SRPs will be monitored and reported upon in accordance with 40 C.F.R. §§ 60.7(c), 60.13, and 60.105. This requirement is not applicable to the AG Flaring Devices identified in Appendix K.

225. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to submit for EPA approval alternative monitoring procedures or requirements pursuant to 40 C.F.R., Part 60, Subpart A, for emissions from SRPs.

226. By no later than one (1) year after the Date of Entry, Premcor shall re-route any SRP sulfur pit emissions from the refineries subject to this Addendum such that all sulfur pit emissions to the atmosphere are either eliminated or included as part of the applicable SRP's emissions subject to NSPS Subpart J limit for SO_2, as a 12-hour rolling average, of 250 ppmvd SO_2, or 300 ppm reduced sulfur, each at 0% oxygen, as required by 40 C.F.R. § 60.104(a)(2).

227. During the life of this Addendum and for the purpose of determining compliance with the SRP emission limits, Premcor shall apply the "startup" and "shutdown" provisions set forth in NSPS Subpart A to the SRP but not to the independent startup or shutdown of its corresponding control device(s) (e.g., TGTU). However, the malfunction exemption set forth in NSPS Subpart A shall apply to both the SRP and its control device(s) (e.g., TGTU).

228. With respect to the Port Arthur Refinery, in order to further enhance operations of its SRPs, further reduce emissions of SO_2, further reduce AG Flaring Incidents and ensure compliance with 40 C.F.R. Part 60, Subparts A and J, Premcor shall implement the following actions at that refinery by the dates listed below:

a. Construct Additional Claus Trains – 546-600 and 546-700 by Date of Entry.

b. Revamp the GFU 241 and 242 Rich Amine Flash drum to include oil skimming facilities and skim oil pumps by December 31, 2009.

c. Install a rich amine flash drum at GFU 243 by December 31, 2009.

d. - g. Reserved.

229. Good Operation and Maintenance. Within one year of the Date of Lodging, Premcor shall submit to EPA and the appropriate Plaintiff-Intervener, a summary of plans for the Premcor Refineries to implement enhanced maintenance and operation of their SRPs, any supplemental control devices, and the appropriate Upstream Process Units that have been or will be implemented. These plans shall be termed Preventive Maintenance and Operation Plans ("PMO Plans"). Each PMO Plan shall be a compilation of Premcor approaches for exercising good air pollution control practices and

for minimizing SO_2 emissions at its Refinery(ies). The PMO Plan shall provide for continuous operation of its SRPs between scheduled maintenance turnarounds with minimization of emissions, including the continued use of supplemental control devices (e.g., amine/caustic scrubbers). The PMO Plan shall include, but not be limited to, sulfur shedding procedures, startup and shutdown procedures, hot standby procedures, emergency procedures and schedules to coordinate maintenance turnarounds of the SRP Claus trains and any supplemental control devices with scheduled turnarounds of major Upstream Process Units. The PMO Plan shall have as a goal the elimination of Acid Gas Flaring. Premcor shall comply with the PMO Plan at all times, including periods of Startup, Shutdown and Malfunction of its SRPs. If Premcor makes changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO_2 emissions, such changes shall be summarized and reported to EPA and the appropriate Plaintiff-Intervener on an annual basis.

229A. In addition, Premcor shall, along with each PMO described above, provide a brief description of the causes of Acid Gas Flaring at each refinery for each Acid Gas Flaring Incident that occurred from January 1, 2002 through December 31, 2006:

i. The date and time that the AG Flaring Incident started and ended (if available or reasonably determinable);

ii. An estimate of the quantity of sulfur dioxide emitted and the calculations used to determine that quantity (if available or reasonably determinable); and

iii. A description of the Root Cause and corrective actions, if any, that were taken and/or should be incorporated into the PMO to reduce the likelihood of a recurrence of such AG Flaring Incident (if reasonably available but only to the extent such Refinery was then owned by Premcor).

230. EPA and the appropriate Plaintiff-Intervener do not, by their review of a PMO Plan and/or by their failure to comment on a PMO Plan, warrant or aver in any manner that any of the actions that Premcor may take pursuant to such PMO Plan will result in compliance with the

provisions of the Clean Air Act or any other applicable federal, state, or local law or regulation. Notwithstanding EPA's or appropriate Plaintiff-Intervener's review of a PMO Plan, Premcor shall remain solely responsible for compliance with the Clean Air Act and such other laws and regulations.

C. Flaring Devices - NSPS Applicability

231. In accordance with the schedule in this Section XII.C, Premcor accepts NSPS Subpart J applicability for each Flaring Device at the Premcor Refineries, as currently identified in Appendix N.

232. – 233. Reserved.

234. Good Air Pollution Control Practices. On and after the Date of Entry, Premcor shall at all times and to the extent practicable, including during periods of Startup, Shutdown, and/or Malfunction, implement good air pollution control practices for minimizing emissions consistent with 40 C.F.R. § 60.11(d).

235. For each Flaring Device, Premcor will elect to use one or any combination of the following NSPS Subpart J compliance methods:

a. Operate and maintain a flare gas recovery system to control continuous or routine combustion in the Flaring Device. Use of a flare gas recovery system on a flare obviates the need to continuously monitor and maintain records of hydrogen sulfide in the gas as otherwise required by 40 C.F.R. §§ 60.105(a)(4) and 60.7;

b. Operate the Flaring Device as a fuel gas combustion device and comply with NSPS monitoring requirements by use of a CEMS pursuant to 40 C.F.R. § 60.105(a)(4) or with a predictive monitoring system approved by EPA as an alternative monitoring system pursuant to 40 C.F.R. § 60.13(i);

c. Eliminate the routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and operate the Flaring Device such that it receives only

process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions; or

d. Eliminate to the extent practicable routes of continuous or intermittent, routinely-generated fuel gases to a Flaring Device and monitor the Flaring Device by use of a CEMS and a flow meter; provided however, that this compliance method may not be used unless Premcor : (i) demonstrates to EPA that the Flaring Device in question emits less than 500 pounds per day of SO_2 under normal conditions; (ii) secures EPA approval for use of this method as the selected compliance method; and (iii) uses this compliance method for five or fewer of the Flaring Devices listed in Appendix N.

236. For the compliance method described in Paragraph 235(b), to the extent that Premcor seeks to use an alternative monitoring method at a particular Flaring Device to demonstrate compliance with the limits at 40 C.F.R. § 60.104(a)(1), Premcor may begin to use the method immediately upon submitting the application for approval to use the method, provided that the alternative method for which approval is being sought is the same as or is substantially similar to the method identified as the "Alternative Monitoring Plan for NSPS Subpart J Refinery Fuel Gas" attached hereto as Appendix D.

237. Compliance Plan for Flaring Devices. For each Covered Refinery, Premcor will submit a Compliance Plan for Flaring Devices to EPA and the applicable Plaintiff-Intervener by no later than December 31, 2009.

238. In each Refinery's Compliance Plan for Flaring Devices, Premcor will:

a. Certify compliance with one or more of the four compliance methods set forth in Paragraph 235 and accept NSPS applicability for at least (i) 50% of the system-wide Flaring Devices identified in Appendix N, (ii) one Flaring Device per Refinery where such Refinery has three or more Flaring Devices, and (iii) at the Lima Refinery the FCC (North) flare which serves the coker unit, provided,

however, that if the selected compliance method is a flare gas recovery system, as identified in Paragraph 235(a), then Premcor may certify that compliance will be achieved by no later than December 31, 2010;

b. Identify the Paragraph 235 compliance method(s) used for each Flaring Device that Premcor identifies under Paragraph 237;

c. Describe the activities that Premcor has taken or anticipates taking, together with a schedule, to meet the objectives of Paragraph 237 at each Refinery; and

d. Describe the anticipated compliance method(s) and schedule that Premcor will undertake for the remaining Flaring Devices identified in Appendix N.

239. By no later than December 31, 2013, Premcor will certify compliance to EPA and the applicable Plaintiff-Intervener with one or more of the four compliance methods in Paragraph 235 and will accept NSPS applicability for all of the Flaring Devices in Appendix N.

240. Performance Tests. By no later than ninety (90) days after bringing a Flaring Device into compliance by using the methods in Paragraph 235(b) or (d), Premcor will conduct a flare performance test pursuant to 40 C.F.R. §§ 60.8 and 60.18, or an EPA-approved equivalent method unless such performance test has previously been performed. In lieu of conducting the velocity test required in 40 C.F.R. § 60.18, Premcor may submit velocity calculations that demonstrate that the Flaring Device meets the performance specification required by 40 C.F.R. § 60.18.

241. The combustion in a Flaring Device of process upset gases or fuel gas that is released to the Flaring Device as a result of relief valve leakage or other emergency malfunctions is exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1).

D. Investigation and Reporting

241A. Premcor shall conduct a review of each of the three Premcor Refineries for the five (5) years prior to the Date of Lodging in an effort to identify any releases that may have been reportable under Section 103(a) of CERCLA, 42 U.S.C. § 9603(a), and Section 304 of EPCRA, 42 U.S.C. §

11004 or similar or corresponding state reporting regulations. Upon completion of this review, Premcor shall resolve its liability for violations of Section 103(a) of CERLA and Section 304 of EPCRA or similar or corresponding state reporting regulations with respect to the events identified in its compliance review by completing the following activities no later than December 31, 2007:

a. submit a CERCLA/EPCRA Compliance Review Report to EPA and Plaintiff-Interveners that identifies potential violations of Section 103(a) of CERCLA and Section 304 of EPCRA or similar or corresponding state reporting regulations for which Premcor seeks a resolution of liability; and

b. correct and/or update procedures to ensure compliance in future; and

c. conduct CERCLA/EPCRA training for the environmental compliance staff at each of the three Premcor Refineries.

242. Beginning no later than ninety (90) days after the Date of Lodging, Premcor shall submit a report to EPA and the applicable EPA Regional Office within sixty (60) days following the end of each AG Flaring Incident, Hydrocarbon Flaring Incident or Tail Gas Incident at a Premcor Refinery. Such reports shall set forth the following information concerning the Incident (a "Root Cause Failure Analysis" or "RCFA"):

1. The date and time that the Incident started and ended. To the extent that the Incident involved multiple releases either within a twenty-four (24) hour period or within subsequent, contiguous, non-overlapping twenty-four (24) hour periods, Premcor shall set forth the starting and ending dates and times of each release;

2. An estimate of the quantity of SO_2 that was emitted and the calculations that were used to determine that quantity;

3. The steps, if any, that Premcor took to limit the duration and/or quantity of SO_2 emissions associated with the Incident;

4. A detailed analysis that sets forth the Root Cause of that Incident, to the extent determinable;

5. An analysis of the measures, if any, that are reasonably available to reduce the likelihood of a recurrence of the Incident resulting at the same refinery from the same Root Cause(s) in the future. The analysis shall discuss the alternatives, if any, that are reasonably available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operational, and maintenance changes shall be evaluated.

6. Either a description of corrective action(s) under Paragraph 245 and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates, or an explanation that corrective action(s) is (are) not required;

7. For AG Flaring and Tail Gas Incidents at any Premcor refinery and for HC Flaring Incidents at the Port Arthur Refinery, a statement that:

   a. Specifically identifies each of the grounds for stipulated penalties in Section XII.F of this Decree and describes whether or not such incident falls under any of those grounds;

   b. Describes whether Paragraph 250 or 251 applies and why, or if such incident falls under Paragraph 252 of this Decree, describes whether subparagraph 252(a), (b), or (c) applies and why; and

   c. States whether or not Premcor asserts a defense to such incident, and if so, a description of such defense.

8. To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated

date by which a follow-up report fully conforming to the requirements of this Paragraph 242 will be submitted; provided, however, that if Premcor, has not submitted a report or a series of reports containing the information required to be submitted under this paragraph within sixty (60) days (or such additional time as EPA may allow) after the due date for the initial report for any incident, the stipulated penalty provisions of Paragraph 260(d) shall apply for failure to timely submit the report. Nothing in this paragraph shall be deemed to excuse Premcor from its investigation, reporting, and corrective action obligations under this Part XII for any incident which occurs after another incident for which Premcor has requested an extension of time under this paragraph; and

9. To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph 242, then, by no later than thirty (30) days after completion of the implementation of corrective action(s), Premcor shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

243. With respect to HC Flaring Incidents and in lieu of analyzing possible corrective actions under Section XII.E and taking interim and/or long-term corrective action under that section for a Hydrocarbon Flaring Incident attributable to the startup or shutdown of a unit that Premcor previously analyzed under this Section XII.D, Premcor may identify such prior analysis when submitting the report required under Paragraph 242. Prior to the installation of a flare gas recovery system identified under Paragraph 235(a) but only after notice to EPA under Paragraph 237, Premcor shall not be required to identify or implement corrective action(s) under Paragraphs 242 and 245, for HC Flaring Incidents unless more than 500 lbs. of SO_2 would have been released if such equipment had been installed and in use. If Premcor determines that the Hydrocarbon Flaring Incident is attributable solely

to the combustion of refinery fuel gas that contains less than 162 ppm of H_2S, it shall so demonstrate in its report under Paragraph 242, and no further action shall be required for that Incident under this Section XII.D. In addition, or in the alternative, if Premcor determines that the Hydrocarbon Flaring Incident is attributable to the combustion of a stream or streams of Continuous or Intermittent Routinely-Generated Fuel Gases prior to Premcor's implementing actions to address such stream(s) when and as required by Paragraphs 235 and 238 but only after notice to EPA under Paragraph 237, it shall so demonstrate in its report under Paragraph 242 and no further action shall be required for that Incident under this Section XII.D. Notwithstanding Paragraph 242, Premcor may submit reports for Hydrocarbon Flaring Incidents at the Lima and Memphis Refineries as part of the Semi-annual Progress Reports required pursuant to Part XVI, but Premcor may not submit reports for Hydrocarbon Flaring Incidents at the Port Arthur Refinery as part of the Semi-annual Progress Reports.

244. With respect to Hydrocarbon Flaring Incidents occurring prior to certifying compliance under Paragraph 238 or 239, Premcor may prepare and submit a single RCFA for one or more Root Causes found by that analysis to routinely reoccur. Premcor shall inform EPA and the relevant Plaintiff-Intervener in that RCFA that it is electing to report only once on that (those) Root Cause(s) during the interim period. Unless EPA or the relevant Plaintiff-Intervener objects within thirty (30) days of receipt of the RCFA, such election shall be effective.

E. <u>Corrective Action</u>

245. In response to any Incident, Premcor, as expeditiously as reasonably practicable, shall take such interim and/or long-term corrective actions, if any, as are reasonable and consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause of that Incident.

245A. Premcor shall implement the following corrective action at the Port Arthur Refinery:

(1) Delayed Coker 843 Wet Gas Compressor Reliability

a. Upgrade and install an adequate level of redundancy in the UPS supply serving critical compressor instrumentation and Fail Safe Control systems by December 31, 2009;

b. Develop for the coker's current cycle and for any subsequent cycle a task schedule similar to Foster Wheeler's task schedule for the 18-hour cycle by June 30, 2007;

(2) SGRU 1242 Sats Gas Compressor Reliability

a. Retrofit advanced compressor surge and molecular weight control systems on the existing compressor by December 31, 2009;

b. Integrate the compressor control system with the unit DCS such that the cause of any compressor trip is identified and recorded by December 31, 2009;

(3) Improve Amine Unit Process Control

a. Install redundant nozzles/level transmitter/indication on D-1250 Cold LP Separator OH KO Drum by December 31, 2009;

b. Relocate high level alarm on D1260 product stripper reflux drum by June 30, 2007;

c. Install redundant nozzles/level transmitter/indication on D-1260 product stripper reflux drum by December 31, 2009;

d. Install differential pressure transmitters across dP indicator on T-1530 at HCU 942 by June 30, 2007;

e. Install redundant pressure indication on D-1290 Fractionator Feed Flash Drum (stripper bottoms) at HCU 942 by December 31, 2009;

f. Install redundant nozzles/level transmitter/indication on D-6850 C3/C4 Amine Settler by December 31, 2009;

g. Install redundant nozzles/level transmitter/indication on T-6880 Coker Sponge Absorber by December 31, 2009;

h. Automate purge on T-101 Pump-around at ATU 7841 by 06/30/2007;

(4) Install oil skimming on T-4002 spent amine tank by December 31, 2009; and

(5) Revamp D-102 Amine/Oil Coalescer at ATU 7841 by December 31, 2007.

246. If EPA does not notify Premcor in writing within sixty (60) days of receipt of the report(s) required by Paragraph 242 that it objects to one or more aspects of Premcor's proposed corrective action(s), if any, and schedule(s) of implementation, if any, then that (those) action(s) and schedule(s) shall be deemed acceptable for purposes of compliance with Paragraph 245 of this Addendum.

247. EPA does not, by its agreement to the entry of this Addendum or by its failure to object to any corrective action that Premcor may take in the future, warrant or aver in any manner that any of Premcor's corrective actions in the future will result in compliance with the provisions of the Clean Air Act or its implementing regulations. Notwithstanding EPA's review of any plans, reports, corrective actions or procedures under this Part XII, Premcor shall remain solely responsible for non-compliance with the Clean Air Act and its implementing regulations. Nothing in this paragraph shall be construed as a waiver of EPA's rights under the Clean Air Act and its regulations for future violations of the Act or its regulations.

248. If EPA does object, in whole or in part, to Premcor's proposed corrective action(s) and/or its schedule(s) of implementation, or, where applicable, to the absence of such proposal(s) and/or schedule(s), it shall notify Premcor of that fact within sixty (60) days following receipt of the RCFA required by Paragraph 242. EPA shall not, in such notice, amend or modify the schedule of activities identified in Paragraphs 228 and 245a. If EPA and Premcor cannot agree on the appropriate corrective action(s), if any, to be taken in response to a particular Incident, either Party may invoke the Dispute Resolution provisions of Part XXIII of the Addendum.

F. AG Flaring, Tail Gas Incidents, Port Arthur Hydrocarbon Flaring Incidents And Stipulated Penalties

249. The provisions of this Section XII.F are intended to implement the process outlined in the logic diagram attached hereto as Appendix F to this Addendum. These provisions shall be interpreted and construed, to the maximum extent feasible, to be consistent with that Appendix. However, in the event of a conflict between the language of those paragraphs and Appendix F, the language of those paragraphs shall control.

250. The stipulated penalty provisions of Paragraph 260(a) shall apply to any Acid Gas Flaring or Tail Gas Incident at a Premcor Refinery, or Hydrocarbon Flaring Incident at the Port Arthur Refinery ("Port Arthur HC Flaring Incident"), for which the Root Cause was one or more of the following acts, omissions, or events:

a. Error resulting from careless operation by the personnel charged with the responsibility for the Sulfur Recovery Plant, TGU, or Upstream Process Units;

b. Failure to follow written procedures;

c. A failure of a part, equipment or system that is due to a failure by Premcor to operate and maintain that part, equipment or system in a manner consistent with good engineering practice;

d. With respect to the Port Arthur Refinery, a HC Flaring Incident resulting from any of the following root causes once the corresponding corrective action has been completed pursuant to Paragraph 245a:

i. Short-term loss of power to critical Coker 843 Wet Gas Compressor instrumentation and fail safe control systems.

ii. Trips of K-2300 A/B Wet Gas Compressors from surging because of low molecular weight feed streams.

iii. Lack of capturing and recording operating data generated by SGRU 1242 compressor control system in the distributed control system does not

allow troubleshooting the cause of a K-2300 A/B Wet Gas Compressors trips.

iv. Process upset due to erroneous level indication in D-1250 Cold LP Separator OH KO Drum at HCU 942 caused by plugging of a nozzle.

v. High elevation of the high level alarm point on D-1260 Product Stripper Reflux Drum at HCU 942 does not allow operators additional time to correct a rising level situation before drum overfill.

vi. Process upset due to erroneous level indication in D-1260 Product Stripper Reflux Drum at HCU 942 caused by plugging of a nozzle.

vii. Lack of dP indicator and pressure transmitter on T-1530 at HCU 942 does not provide Operators an early warning of when to inject anti-foam agent into the amine absorber.

viii. Lack of duplicate pressure transmitters on D-1290 Fractionator Feed Flash Drum (stripper bottoms) at HCU 942 increases the likelihood of erroneous pressure indication due to instrument failure.

ix. Process upset due to erroneous level indication in D-6850 C3/C4 Amine Settler at ATU 7841 caused by plugging of a nozzle.

x. Process upset due to erroneous level indication in T-6880 Coker Sponge Absorber at DCU 843 caused by plugging of a nozzle.

xi. Lack of automatic purging in T-101 Pump-Around at ATU 7841 can result in over-purging and lost of pump suction at P-101A/B Pump-Around Pumps, thereby causing an upset to T-101 Amine Regenerator.

xii. Lack of oil skimming system does not allow the separation of oil from the solvent in T-4002 Spent Amine Tank at ATU 7841.

xiii. Inadequate efficiency of D-102 Coalescer at ATU 7841 does not allow for better separation of oil from the solvent in T-4002 Spent Amine.

xiv. Failure to update the task schedule for DCU 843 to match the Coker's current cycle.

e. With respect to the Port Arthur Refinery, an AG Flaring Incident resulting from any of the following root causes once the corresponding corrective action has been completed pursuant to Paragraph 228:

i. Failure to install additional Claus Trains 546-600 and 546-700.

ii. Failure to revamp the GFU 241 and 242 Rich Amine Flash drum to include oil skimming facilities and skim oil pumps.

iii. Failure to install a rich amine flash drum at GFU 243.

251. If the AG Flaring Incident, Tail Gas Incident or Port Arthur HC Flaring Incident is not a result of one of the root causes identified in Paragraph 250, then the stipulated penalty provisions of Paragraph 260(a) shall apply if the AG Flaring Incident, Tail Gas Incident or Port Arthur HC Flaring Incident:

a. Results in emissions of sulfur dioxide at a rate greater than twenty (20.0) pounds per hour continuously for three (3) consecutive hours or more and Premcor failed to act consistent with the PMO Plan and/or to take any action during the Incident to limit the duration and/or quantity of SO_2 emissions associated with such incident; or

b. With respect to any of the Premcor Refineries, causes the total number of Acid Gas Flaring Incidents in a rolling twelve (12) month period to exceed five (5) or causes the total number of Tail Gas Incidents in a rolling twelve (12) month period to exceed five (5), or, with respect to only the Port Arthur Refinery, causes the total number of Port Arthur HC Incidents in a rolling twelve (12)

month period to exceed ten (10) for the first three (3) years following the Date of Entry of this Addendum or causes the total number of Port Arthur HC Incidents in a rolling twelve (12) month period to exceed five (5) thereafter. In the event that an Incident falls under both Paragraphs 250 and 251, then Paragraph 250 shall apply.

252. With respect to any AG Flaring Incident, Tail Gas Incident or Port Arthur HC Flaring Incident not identified in Paragraph 250 or 251, the following provisions shall apply:

a. Agreed Upon Malfunction: If the Root Cause of the Incident was sudden, infrequent, and not reasonably preventable through the exercise of good engineering practice, then that cause shall be designated as an agreed-upon malfunction for purposes of reviewing subsequent Incidents, and the stipulated penalty provisions of Paragraph 260 shall not apply.

b. First Time: If the Root Cause of the Incident was sudden and infrequent but reasonably preventable through the exercise of good engineering practices, then Premcor shall implement corrective action(s) pursuant to Paragraph 245 and the stipulated penalty provisions of Paragraph 260 shall not apply.

c. Recurrence: If the Root Cause of the Incident is a recurrence of the same Root Cause that caused a previous Incident occurring after the Date of Entry, then the stipulated penalty provisions of Paragraph 260(a) shall apply unless either the Root Cause of the previous Incident was designated as an Agreed Upon Malfunction under Paragraph 252.a, or Premcor was in the process of timely developing or implementing a corrective action plan under Paragraphs 228, 242, 245, or 245a for such previous Incident.

253. Defenses: Premcor may raise the following affirmative defenses in response to a demand by the United States for stipulated penalties:

a. Force majeure.

b. As to Paragraph 250, the Incident does not meet the identified criteria.

c. As to Paragraph 251, the Incident does not meet the identified criteria and/or was due to a Malfunction.

d. As to Paragraph 252, the Incident does not meet the identified criteria, was due to a Malfunction and/or Premcor was in the process of timely developing or implementing a corrective action plan under Paragraphs 228, 242, 245, or 245a for the previous Incident.

e. In the event a dispute under Paragraph 250 or 251 is brought to the Court pursuant to the Dispute Resolution provisions of this Addendum, Premcor may also assert a start up, shutdown and/or upset defense, but the United States shall be entitled to assert that such defenses are not available. If Premcor prevails in persuading the Court that the defenses of startup, shutdown and/or upset are available for Incidents under 40 C.F.R. § 60.104(a)(1), Premcor shall not be liable for stipulated penalties for emissions resulting from such startup, shutdown and/or upset. If the United States prevails in persuading the Court that the defenses or startup, shutdown and/or upset are not available, Premcor shall be liable for such stipulated penalties.

254. Other than for a Malfunction or force majeure, if no Incident and no violation of the emission limits under section XII.B occurs at a Refinery for a rolling 36 month period, then the stipulated penalty provisions of Paragraph 260(a) shall no longer apply to that Refinery. EPA may elect to prospectively reinstate the stipulated penalty provision if Premcor has an Incident which would otherwise be subject to stipulated penalties. EPA's decision shall not be subject to dispute resolution. Once reinstated, the stipulated penalty provision shall continue for the remaining life of this Addendum for that Refinery.

G. Miscellaneous

255. Calculation of the Quantity of Sulfur Dioxide Emissions resulting from AG and HC Flaring. For purposes of this Addendum, the quantity of SO_2 emissions resulting from AG Flaring shall be calculated by the following formula:

Tons of SO_2 = [FR][TD][ConcH_2S][8.31 x 10^{-5}].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons and 10.049 tons would be rounded to 10.0 tons.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each such period of intermittent AG Flaring.

256. Calculation of the Rate of SO_2 Emissions during AG and HC Flaring. For purposes of this Addendum, the rate of SO_2 emissions resulting from AG Flaring shall be expressed in terms of pounds per hour, and shall be calculated by the following formula:

ER = [FR][ConcH_2S][0.166].

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.950 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 19.949 pounds of SO_2 per hour, the emission rate shall be rounded to 19.9.)

257. Meaning of Variables and Derivation of Multipliers used in the Equations in Paragraphs 255 and 256:

ER = Emission Rate in pounds of Sulfur Dioxide per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring, in standard cubic feet per hour

TD = Total Duration of Flaring in hours

ConcH_2S = Average Concentration of Hydrogen Sulfide in gas during Flaring (or immediately prior to Flaring if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.31×10^{-5} = [lb. mole H_2S/385 scf H_2S][64 lbs. SO_2/lb. mole H_2S][Ton/2000 lbs.]

0.166 = [lb. mole H_2S/385 scf H_2S][1.0 lb mole SO_2/1 lb. mole H_2S][64 lb. SO_2/1.0 lb. mole SO_2]

Standard conditions: 68 deg. F, 14.7 lb.-force/sq.in. absolute

The flow of gas to the AG Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or as calculated through the exercise of best engineering judgment. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from any installed SRP feed gas analyzer. In the event that the flow of gas is not measured by an SRP feed gas analyzer or the data point is inaccurate, the missing or inaccurate data point(s) shall be estimated according to best engineering judgment. The report required under Paragraph 242 shall include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

258. Calculation of the Quantity of SO_2 Emissions resulting from a Tail Gas Incident. For the purposes of this Addendum, the quantity of SO_2 emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods or an equivalent method approved by EPA, based on the type of event:

a. If the event constitutes a Tail Gas Incident meeting the definition of Paragraph 220(17)(a), the SO_2 emissions are calculated using the methods outlined in Paragraph 255, or

b. If the event constitutes a Tail Gas Incident meeting the definition of Paragraph 220(17)(b), then the following formula applies to each twenty-four (24) hour period of an incident beginning with the first hour that the rolling twelve (12) hour average SO_2 concentration exceeds the 250 ppmvd Subpart J limit and ending with the twenty-four (24) hour period in which the 250 ppmvd NSPS limit is last exceeded. Total SO_2 emissions during an incident are determined by summing the emissions during each twenty-four (24) hour period of the incident:

$$ER_{TGI} = \sum_{i}^{H_{TGI}} \left([FR_{Inc.}]_i \, [\text{Conc. } SO_2 - 250]_i \, [(20.9 - \%O_2)/20.9]_i \, [0.166 \times 10^{-6}] \right)$$

i=1

Where:

ER_{TGI} = Excess Emissions from Tail Gas at the SRP incinerator, in SO_2 lbs. over a twenty-four (24) hour period

$FR_{Inc.}$ = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the incident.

Conc. SO_2 = Actual SO_2 concentration (CEM data) in the incinerator exhaust gas, ppmvd adjusted to 0% O_2 for each hour of the incident

% O_2 = O_2 concentration (CEM data) in % in the incinerator exhaust gas on dry basis for each hour of the incident

0.166×10^{-6} = [lb. mole of SO_2 / 385 SO_2] [64 lbs. SO_2 /lb. mole SO_2] [1×10^{-6}]

H_{TGI} = Hours when the incinerator CEM was exceeding 250 ppmvd adjusted to 0% O_2 in each twenty-four (24) hour period of the incident (as described above).

Standard conditions: 68 deg. F, 14.7 lb.-force/sq.in. absolute

In the event the SO_2 and/or the O_2 CEM hourly concentration data are inaccurate or not available or a flow meter for FR_{Inc}, does not exist or is inoperable, then estimates will be used based on best engineering judgment.

259. Any disputes under the provisions of this Part XII shall be resolved in accordance with Part XXIII (Dispute Resolution) of this Addendum.

H. <u>Stipulated Penalties Under This Part</u>

260. Except for Port Arthur HC Flaring Incidents, nothing in this Part XII shall be understood to subject Premcor to stipulated penalties for HC Flaring Incidents under Paragraph 260(a). Premcor shall be liable for stipulated penalties for any Port Arthur HC Flaring Incident, to the extent

that such Port Arthur HC Flaring Incident does not qualify for a defense to stipulated penalties authorized under this Addendum. Premcor shall be liable for the following stipulated penalties for violations of the requirements of this Part. For each violation, the amounts identified below apply on the first day of violation, and are calculated for each incremental period of violation (or portion thereof):

a. AG Flaring Incidents and Port Arthur HC Flaring Incidents for which Premcor is liable under this Part. Stipulated penalties for Port Arthur HC Flaring Incidents shall be equal to seventy-five percent (75%) of the penalty for AG Flaring Incidents.

Tons Emitted in AG Flaring Incident	Length of Time from Commencement of Flaring within the AG Flaring Incident to Termination of Flaring within the AG Flaring Incident is 3 hours or less	Length of Time from Commencement of Flaring within the AG Flaring Incident to Termination of Flaring within the AG Flaring Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time from Commencement of Flaring within the AG Flaring Incident to Termination of Flaring within the AG Flaring Incident is greater than 24 hours
5 Tons or Less	$500 per ton	$750 per ton	$1000 per ton
Greater than 5 tons, but less than or equal to 15 tons	$1,200 per ton	$1,800 per ton	$2,300 per ton, up to, but not exceeding, $27,500 in any one calendar day
Greater than 15 tons	$1,800 per ton, up to, but not exceeding, $27,500 in any one calendar day	$2,300 per ton, up to, but not exceeding, $27,500 in any one calendar day	$27,500 per calendar day

i. For purposes of calculating stipulated penalties pursuant to this subparagraph, only one cell within the matrix shall apply. Thus, for example, for an AG Flaring Incident in which the AG Flaring starts at 1:00 p.m. and ends at 3:00 p.m., and for which 14.5 tons of sulfur dioxide are emitted, the penalty would be $17,400 (14.5 x $1,200); the penalty would not be $13,900 [(5 x $500) + (9.5 x $1200)].

ii. For purposes of determining which column in the table set forth in this subparagraph applies under circumstances in which flaring occurs intermittently during an AG or Port Arthur HC Flaring Incident, the flaring shall be deemed to commence at the time that the flaring that triggers the initiation of an AG or Port Arthur HC Flaring Incident commences, and shall be deemed to terminate at the time of the termination of the last episode of flaring within the AG or Port Arthur HC Flaring Incident. Thus, for example, for AG Flaring within an AG Flaring Incident that (i) starts at 1:00 p.m. on Day 1 and ends at 1:30 p.m. on Day 1; (ii) recommences at 4:00 p.m. on Day 1 and ends at 4:30 p.m. on Day 1; (iii) recommences at 1:00 a.m. on Day 2 and ends at 1:30 a.m. on Day 2; and (iv) no further AG Flaring occurs within the AG Flaring Incident, the AG Flaring within the AG Flaring Incident shall be deemed to last 12.5 hours -- not 1.5 hours -- and the column for AG Flaring of "greater than 3 hours but less than or equal to 24 hours" shall apply.

b. For those corrective action(s) which Premcor is required to undertake following Dispute Resolution (Part XXIII), then, from the date EPA notifies Premcor of EPA's determination that corrective action, in addition to or distinct from any corrective action proposed by Premcor is required to respond to the Incident, reported under Paragraph 242, until the earlier of the following

dates: (i) the date that a final agreement is reached between EPA and Premcor regarding the corrective action; or (ii) the date that a court order regarding the corrective action is entered:

$5,000 per month

c. Failure to complete any corrective action under Section XII.E of this Decree in accordance with the schedule for such corrective action agreed to by Premcor or imposed on Premcor pursuant to the Dispute Resolution provisions of Part XXIII of this Addendum provided (with any such extensions thereto as to which EPA and Premcor may agree in writing):

$5,000 per week

d. Failure to timely submit a report required by this Part XII, beginning on the seventh day past the report's due date:

$5,000 per week, per report

e. For submitting any report that does not include the elements identified in Paragraph 242, beginning on the seventh day after Premcor receives written notice from EPA of the deficiencies in such report and until corrected:

$5,000 per week, per report

I. Certification

261. All notices, reports or any other submissions required of Premcor by this Part XII shall contain the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and that I have made a diligent inquiry of those individuals immediately responsible for obtaining the information and that to the best of my knowledge and belief, the information submitted herewith is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

262. Except as otherwise provided herein, the reporting requirements set forth in this Part XII do not relieve Premcor of its obligation to any State, local authority, or EPA to submit any other reports or information required by the CAA, or by any other state, federal or local requirements.

J. Flare Gas Recovery Systems

263. Periodic Maintenance of Flare Gas Recovery Systems. The Parties recognize that periodic maintenance may be required for properly designed and operated flare gas recovery systems. To the extent that Premcor currently operates or will operate flare gas recovery systems, Premcor will take all reasonable measures to minimize emissions while such periodic maintenance is being performed.

264. Safe Operation of Refining Processes. The Parties recognize that a flare gas recovery system may need to be bypassed in the event of an emergency, including unscheduled maintenance of such system in order to ensure continued safe operation of refinery processes. Nothing in this Addendum precludes Premcor from temporarily bypassing a flare gas recovery system under such circumstances. To the extent that a Hydrocarbon Flaring Incident at the Premcor Refineries has as its Root Cause the bypass of a flare gas recovery system for safety or maintenance reasons as stated above, Premcor will be required only to describe in the semiannual reports due under Part XVI the emergency or maintenance activity giving rise to the Hydrocarbon Flaring Incident at the Premcor Refinery, including an estimate of emissions, and to list the date, time, and duration of such Incident.

265. Commissioning. For the six (6) month period after the installation of a flare gas recovery system (that is, during the time in which the flare gas recovery system is being commissioned), Premcor will not be required to undertake Hydrocarbon Flaring Incident investigations if the Root Cause of the Hydrocarbon Flaring Incident is directly related to the commissioning of the flare gas recovery system and will not be required to take any further action.

266. Lima Refinery: Emissions Unit P025 – Benzene NESHAPS Sewer System.

a. Premcor shall install, operate and maintain a compressor system to route all Emissions Unit P025 (benzene NESHAP sewer system) vapors to an existing sulfur recovery unit fuel gas amine treater ("Compressor System") by no later than April 1, 2008. Premcor shall complete installation of the Compressor System in accordance with the following schedule:

i. Within thirty (30) days of the Date of Entry of this Addendum, Premcor shall complete the process design and perform the project detailed design. This includes the selection of the compressor design, procurement of financial funding, and completion of the detailed mechanical, electrical, instrumental and civil design.

ii. By no later than September 30, 2007, Premcor shall order all the long lead items. This includes, but is not limited to, procurement of materials and installation of auxiliary components.

iii. By April 1, 2008, Premcor shall complete the installation of the Compressor System and shall, thereafter, route all vapors to an existing sulfur recovery unit fuel gas amine treater.

b. Premcor shall submit progress reports for the requirements specified in Paragraph 266.a within fourteen (14) days after each completion date. The reports shall include a narrative description of whether the requirement has been completed and how it was accomplished, with any documentation necessary to demonstrate that the requirement was completed. If a requirement has not been completed, the report shall include an explanation of the reasons for the missed completion date, and a description of all actions to be taken to complete the requirement. In the event of a missed completion date, a follow-up progress report shall be submitted every fourteen (14) days after the initial report of non-completion until the requirement is completed. In addition to these progress reports, Premcor shall also submit a status reports concerning the work on the compressor system by July 1, 2007, fourteen (14) days after Date of Entry, and January 14, 2008.

c. Within thirty days after the completion of the installation of the Compressor System, Premcor shall submit Title V permit and permit to install modification applications to the State of Ohio that incorporate the requirements in 266.a. The applications shall include suggested monitoring, recordkeeping and reporting that are sufficient to provide reasonable assurance the Compressor System is properly routing the Emissions Unit P025 (benzene NESHAP sewer system)

vapors to an existing sulfur recovery unit fuel gas amine treater, as well as addressing all other applicable requirements.

267. Reserved.

XIII. REFINERY SELF-EVALUATIONS AND AUDITS

A. Reserved

268. – 269. Reserved.

B. NSPS QQQ Audits

270. Premcor may elect to perform an audit of compliance with the regulatory obligations of Subpart QQQ of the NSPS, promulgated at 40 C.F.R Part 60, Subpart QQQ ("Subpart QQQ") at one or more Premcor Refineries ("QQQ Audit"). Within ninety (90) days of the Date of Lodging, Premcor shall notify EPA in writing which Premcor Refineries, if any, are electing to perform a QQQ Audit pursuant to this Section XIII.B.

271. QQQ Audits may cover all potential obligations from reporting years 1999 through Date of Entry of this Decree, including, but not limited to: (1) potential failures to make required applicability determinations; (2) potential failures to install proper control or monitoring equipment; (3) potential failures to undertake work practices; and (4) potential failures to submit accurate and/or timely reports.

272. The QQQ Audits may be performed by either an outside contractor or qualified internal staff. Premcor may, where appropriate, consult with EPA regarding the scope of any of the proposed QQQ Audits. The QQQ Audits must be completed within one (1) year of notification under Paragraph 270.

273. For each Refinery electing to conduct a QQQ Audit, a final QQQ Audit report shall be submitted to EPA within thirty (30) days of completion of the QQQ Audit (the "QQQ Audit Report"). The QQQ Audit Report shall: describe the processes, procedures, and methodology used to conduct the audit; clearly identify any violations or potential violations of Subpart QQQ discovered at the

Refinery through the QQQ Audit; describe any and all measures taken or to be taken to correct the disclosed violations; and provide details concerning the costs associated with such corrective action(s) and economic benefit(s) obtained by Premcor.

274. Each QQQ Audit report shall be signed by an appropriate company official and the following certification shall directly precede such signature:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and that I have made a diligent inquiry of those individuals immediately responsible for obtaining the information and that to the best of my knowledge and belief, the information submitted herewith is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

275. Violations and potential violations reported in a QQQ Audit and corrected by the date of the QQQ Audit Report or such other reasonable additional time as EPA allows shall be deemed to satisfy the requirements of EPA's Audit Policy. Once EPA has made the determination that a QQQ Audit conducted by Premcor was consistent with the requirements of this Section XIII.B, EPA will notify Premcor in writing. Premcor shall thereupon be released from liability for any claims for civil and administrative penalties with respect to all violations or potential violations disclosed and corrected in accordance with this Part XIII, and contained in EPA's notification.

276. For each Refinery that undertakes a QQQ Audit, Premcor shall pay a stipulated penalty of $50,000, in total, for each such Refinery covering any and all disclosed violations, but if EPA determines that the economic benefit of non-compliance exceeds $25,000, Premcor shall pay an additional stipulated penalty equal to the difference between such economic benefit and $25,000.

277. Reserved.

C. <u>Refinery MACT I Audits</u>

278. Premcor may elect to perform an audit of compliance with the regulatory obligations of 40 C.F.R. Part 63, Subpart CC promulgated at 40 C.F.R Section 63.640 et seq., (the "Refinery MACT I") at one or more Premcor Refineries ("MACT Audit"). Within ninety (90) days of the Date of

Lodging, Premcor shall notify EPA in writing which Refineries, if any, are electing to perform a MACT Audit pursuant to this Section XIII.C.

279. MACT Audits may cover all potential obligations from reporting years 1999 through Date of Entry of this Decree. Reporting obligations under MACT CC may include, but are not limited to: (1) potential failures to make required applicability determinations; (2) potential failures to install proper control or monitoring equipment; (3) potential failures to undertake work practices; and (4) potential failures to submit accurate and/or timely reports.

280. The MACT Audits may be performed by either an outside contractor or qualified internal staff. Premcor may, where appropriate, consult with EPA regarding the scope of any of the proposed MACT Audits. The MACT Audits must be completed by no later than one year of notification under Paragraph 278.

281. For each Refinery electing to conduct a MACT Audit, a final MACT Audit Report shall be submitted to EPA within 30 days of completion of the MACT Audit. The MACT Audit Report shall describe the processes, procedures, and methodology used to conduct the audit; clearly identify any violations or potential violations of Refinery MACT I discovered at the Refinery through the MACT Audit; describe any and all measures taken to correct the disclosed violations; and provide details concerning the costs associated with such corrective action(s) and economic benefit(s) obtained by Premcor.

282. Each MACT Audit Report shall be signed by an appropriate company official and the following certification shall directly precede such signature:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and that I have made a diligent inquiry of those individuals immediately responsible for obtaining the information and that to the best of my knowledge and belief, the information submitted herewith is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

283. Violations and potential violations reported in a MACT Audit Report and corrected by the date of the MACT Audit Report or such other reasonable additional time as EPA allows shall be

deemed to satisfy the requirements of EPA's Audit Policy. Once EPA has made the determination that a MACT Audit conducted by Premcor was consistent with the requirements of this Section XIII.C, EPA will notify Premcor in writing. Premcor shall thereupon be released from liability for any claims for civil and administrative penalties with respect to all violations or potential violations disclosed and corrected in accordance with this Part XIII, and contained in EPA's notification.

284. For each Refinery that undertakes a MACT I Audit, Premcor shall pay a stipulated penalty of $50,000, in total, for such Refinery covering any and all disclosed violations, but if EPA determines that the economic benefit of its non-compliance exceeds $25,000, Premcor shall also pay an additional stipulated penalty equal to the difference between such economic benefit and $25,000.

285. Reserved.

XIV. PERMITTING

286. Construction. Premcor agrees to apply for and make all reasonable efforts to obtain in a timely manner all appropriate federally enforceable permits (or construction permit waivers) for the construction of the pollution control technology required to meet the above pollution reductions at the Premcor Refineries. For purposes of the PSD and New Source Review ("NSR") non-attainment regulations, any source subject to an optimization study or demonstration period pursuant to this Addendum, whether involving the construction of control equipment or utilization of catalyst additives, will not be deemed to have "commenced operation" as a modified source including such control technology or catalyst additive until after the optimization study or demonstration period, as applicable, is completed and applicable emission limitations are established for such source in accordance with this Addendum. Nothing in this paragraph constitutes a determination by the United States or any Plaintiff-Intervener hereto, nor any admission by Premcor that any permit is required prior to the installation or operation of any equipment installed pursuant to this Addendum.

287. In submitting to the appropriate permitting authority an application for an air quality permit governing any emission control measure identified in this Addendum, Premcor may include in

its permit application any contemporaneous changes associated with a single project. The calculation of the emission increase or decrease attributed to the project shall apply the following criteria:

a. The "baseline" emission rate used for the project shall reflect emissions of the relevant criteria pollutants prior to project implementation and shall not reflect projected emission reductions from any emission control measures identified in this Addendum prior to the date that such emission control measures are required or installed pursuant to this Addendum, whichever date is earlier (the "Pre-Project Baseline Emission Rate");

b. The projected emission rate attributable to the project following completion of the project governed by the permit application shall be based upon the net emission increase or decrease resulting from all contemporaneous changes that are part of a single project and that are reflected in the permit application (the "Post-Project Projected Emission Rate"); and

c. Both the Pre-Project Baseline Emission Rate and the Post-Project Projected Emission Rate shall otherwise be determined, and the resulting net emission increase otherwise calculated, in accordance with relevant regulations applicable at the time of permit application submittal.

288. In the event that any provision of this Addendum provides for imposition upon an emission unit of any emission limitation, either through the Addendum or any air quality permit to be issued in accordance with the terms of the Addendum, the compliance of the emission unit with the relevant emission limitation shall be determined based only on emissions from the source subsequent to the effective date of the emission limitation.

289. – 290. Reserved.

291. Obtaining Permit Limits for Addendum Emission Limits and Standards That Are Effective Upon Entry. By no later than December 31, 2007, Premcor shall submit applications to the

appropriate permitting authority to incorporate the emission limits and standards required by the Addendum that are effective as of the Date of Entry of the Addendum into federally enforceable minor or major new source review permits or other permits (other than Title V permits) which are federally enforceable. Following submission of the permit application, Premcor shall cooperate with the appropriate permitting authority by promptly submitting all information that such permitting authority seeks following its receipt of the permit application. Upon issuance of such permits or in conjunction with such permitting, Premcor shall file any applications necessary to incorporate the requirements of those permits into the Title V permit for the relevant refinery. Nothing in this Addendum is intended nor shall it be construed to require the establishment of emission limits (e.g., pounds per hour or tons per year) other than those concentration or rate based limits expressly prescribed in this Addendum.

292. Obtaining Permit Limits For Addendum Emission Limits That Become Effective After Date of Entry. As soon as practicable, but in no event later than ninety (90) days after the effective date or establishment of any emission limits and standards required by or under this Addendum, Premcor shall submit applications to the appropriate permitting authority to incorporate those emission limits and standards into federally enforceable minor or major new source review permits or other permits (other than Title V permits) which are federally enforceable. Following submission of the permit application, Premcor shall cooperate with the appropriate permitting authority by promptly submitting all information that such permitting authority seeks following its receipt of the permit application. Upon issuance of such permit or in conjunction with such permitting, Premcor shall file any applications necessary to incorporate the requirements of that permit into the Title V permit of the appropriate refinery.

293. Mechanism for Title V Incorporation**.** The Parties agree that the incorporation of any emission limits or other standards into the Title V permits for the Premcor Refineries, as required under Paragraphs 291 and 292, shall be in accordance with the applicable state or local Title V rules.

294. This Addendum is not intended to require the continued use of a particular control technology past the compliance dates established in this Addendum. The parties agree that once the concentration based permit limits are established using the methodology provided for in the Addendum, Premcor may elect to comply with that concentration based permit limit through other control technology methods. Nothing here relieves Premcor from obtaining any appropriate state permits or authorizations to switch to such other control technology or methods.

XV. EMISSION REDUCTION CREDITS

295. This Part sets forth the exclusive process for Premcor to use any NOx or SO_2 emission reductions required by this Addendum as emission reduction credits for PSD netting or major nonattainment New Source Review ("NSR") offsets, or in any minor NSR permit or permit proceeding where such credits or offsets are relied upon to avoid PSD or major nonattainment NSR permitting. Except as provided in this Part, Premcor will neither generate nor use any NOx or SO_2 emission reductions resulting from any projects conducted pursuant to this Addendum as emission reduction credits or offsets in any PSD, major nonattainment and/or minor NSR permit or permit proceeding ("NSR Permit" or "NSR Permitting").

296. Outside the Scope of Prohibition. Nothing in this Addendum is intended to prohibit Premcor from:

a. utilizing or generating netting reductions or emission offset credits from refinery units that are covered by this Addendum to the extent that the proposed netting reductions or emission offset credits represent the difference between the emissions limitations set forth in or used to meet the terms of this Addendum for these refinery units and the more stringent emissions limitations that Premcor may elect to accept for these refinery units in NSR Permitting;

b. utilizing or generating netting reductions or emission offset credits for refinery units that are not subject to an emission limitation pursuant to this Addendum;

c. utilizing emission reductions from the installation of controls required by this Addendum in determining whether a project that includes both the installation of controls under this Addendum and other construction occurring at the same time and that is permitted as a single project, triggers NSR Permitting; and

d. utilizing or generating emission reductions for a particular Refinery's compliance with any rules or regulations designed to address regional haze, state specific air quality issues, or the non-attainment status of any area (excluding NSR Permitting, but specifically including the Beaumont/Port Arthur Area NOx SIP, and other such programs) that apply to the particular Refinery. Notwithstanding the preceding sentence, Premcor will not trade or sell any emissions reductions to another refinery or plant.

A. <u>Generating NOx and SO_2 Emission Credits</u>

296A. For purposes of this Addendum, emissions credits for PSD netting and Nonattainment NSR offsets may be applied and used only at the refinery where they were generated.

297. Emission reduction credits generated by each unit shall be determined in accordance with the PSD/Nonattainment NSR regulations applicable to the relevant facility at the time the reductions are proposed to be generated. The quantity of emission reduction credits shall be calculated as the difference between such unit's baseline emissions and its applicable emissions at the time the emission reductions are proposed to be used for netting or are generated for offset purposes, as limited by the percentages expressed and the limitations on use set forth in Paragraphs 299 and 300.

298. To apply or use emission reduction credits under this Part, Premcor must make any such emission reductions federally enforceable. Such emission reductions are creditable for five years from their date of generation and shall survive termination of the Addendum.

B. Using NOx and SO_2 Emission Credits and Offsets

299. Subject to Paragraph 305, Premcor may use, without further restriction or limitation up to five percent (5%) of the NOx emission reductions achieved through its compliance with Part IV of this Addendum as emission reduction credits for netting and/or offsets in any NSR Permit after the Date of Entry of this Addendum; provided, however, that Premcor may use such NOx emission reductions for netting or offset proposes only at a new or modified heater or boiler that is designed to achieve an emission rate of 0.020 lbs NOx per million Btu (even if the burners do not achieve that emission rate in practice and a less stringent emission limit is therefore warranted); and provided further, however, that, to the extent that Premcor uses any NOx emission reduction credits from the five percent (5%) of the NOx emission reductions achieved through its compliance with Part IV of this Addendum pursuant to this sentence, then the quantity of credits available to Valero pursuant to Paragraph 299 of the Consent Decree shall be reduced by the number of NOx emission reduction credits used by Premcor pursuant to this sentence. Premcor may use up to an additional five percent (5%) of the NOx emission reductions achieved through its compliance with Part IV of this Addendum as emission reduction credits for netting and/or offsets in any PSD, Nonattainment NSR and/or minor NSR permit or permit proceeding after the Date of Entry of this Addendum only at a new or modified heater or boiler that is designed to achieve an emission rate of 0.020 lbs NOx per million Btu (even if the burners do not achieve that emission rate in practice and a less stringent emission limit is therefore warranted) and that is constructed or modified for purposes of compliance with Clean Fuels requirements. For purposes of this Addendum, a "Clean Fuels" requirement includes Tier II Gasoline, Low or Ultra Low Sulfur Diesel, ether based oxygenate replacement (but only to the extent such replacement is demonstrated by Premcor), or other specialty fuels identified in or required under any SIP.

300. Subject to Paragraph 305, Premcor may use, without further restriction or limitation, up to five percent (5%) of the SO_2 emission reductions achieved through compliance with this Addendum

as emission reduction credits for netting and/or offsets in any NSR Permit after the Date of Entry of this Addendum, provided, however, that such new or modified unit is for purposes of compliance with Clean Fuels requirements and that such new or modified source meets the definition of a "Netting Unit" under Paragraph 301. Premcor may use up to an additional five percent (5%) of the SO_2 emission reductions achieved through its compliance with this Addendum as emission reduction credits for netting and/or offsets in any NSR Permit after the Date of Entry of this Addendum only to the extent that such emission reductions were generated by a "Netting Unit" and will be used for a new or modified source that meets the definition of a "Netting Unit;" provided however that, to the extent that Premcor uses any SO_2 emission reduction credits from the additional five percent (5%) of the SO_2 emission reductions achieved through its compliance with this Addendum pursuant to this sentence, then the quantity of credits available to Valero pursuant to Paragraph 300 of the Consent Decree shall be reduced by the number of SO_2 emission reduction credits used by Premcor pursuant to this sentence.

301. For purposes of this Part XV, Netting Units shall be defined as follows:

a. Any FCCU that achieves an SO_2 concentration of 25 ppmvd on a 365-day rolling average basis, at 0% oxygen, or such other emission limit as may be established by EPA based upon a percentage reduction in SO_2 emissions, as specifically authorized in Part VI of this Addendum;

b. Heaters and boilers that either combust fuel gas containing less than 0.1 grams of hydrogen sulfide per dry standard cubic foot of fuel gas or emit SO_2 at less than 20 ppmvd at 0% oxygen, both on a 3-hour rolling average basis; and

c. An SRP that complies with relevant provisions of 40 C.F.R. Part 60, Subpart J.

302. Premcor will submit to EPA annual reports regarding the generation and use of emission reduction credits under this Part XV. The first such report will be submitted by January 31, 2008. Successive reports will be submitted on January 31 of each subsequent year for the duration of

this Addendum. Each such report shall contain the following information for each Premcor Refinery, to the extent that emission reduction credits are both generated at such refinery and are limited by this Part:

a. The quantity of credits generated since the Date of Entry of this Addendum and the emission unit(s) generating such credits, the date on which those credits were generated, and the basis for those determinations;

b. The quantity of credits used since the Date of Entry of this Addendum and the emission units to which those credits were applied;

c. To the extent known at the time the report is submitted, the additional units to which credits will be applied in the future and the estimated amount of such credits that will be used for each such unit; and

d. To the extent Premcor will seek to use the additional five percent (5%) of NOx credits provided for in the second sentence in Paragraph 299 and/or the five percent (5%) of SO_2 credits provided for in the first sentence in Paragraph 300, the date by which Clean Fuels are expected to be produced at that Facility and a detailed explanation of why such unit(s) is (are) necessary for the production of Clean Fuels.

303. The provisions of this Part are intended to restrict the quantity of SO_2 and NOx emission reduction credits that may be generated by Premcor as a result of the emission reductions specifically required by this Addendum for use in any netting and/or offsets in any NSR Permit after the Date of Entry of this Addendum. In addition, the provisions of this Part restrict the use of certain SO_2 and NOx emission reduction credits authorized for generation under this Addendum to projects necessary to the production of Clean Fuels, as defined and in the manner described in this Addendum.

304. Without limitation to the foregoing, nothing in this Addendum is intended to contravene, impair, be inconsistent with or otherwise restrict compliance options available to Premcor under any SIP to demonstrate compliance with any emission limitation or other standard applicable to

the Premcor Refineries, including without limitation any provision established or imposed under an applicable SIP governing intra-facility emission trading.

305. Nothing in this Part XV shall affect the validity of permits issued or permit applications made prior to the Date of Lodging, including any contemporaneous netting analyses in such permits and/or applications. The following shall apply to all such permits and permit applications:

a. Emission reduction credits and/or offsets used by or for units that were permitted, constructed/modified and began operation before October 31, 2006, shall not affect the amount of credits and/or offsets available for Premcor's use under Paragraphs 299 and 300.

b. Emission reduction credits and/or offsets used by or for units that were permitted but did not begin operation before November 10, 2006, shall not affect the amount of credits and/or offsets available for Premcor's use under Paragraphs 299 and 300.

c. Emission reduction credits and/or offsets used by or for units that were not permitted before October 31, 2006, shall affect the amount of credits and/or offsets available for Premcor's use under Paragraphs 299 and 300.

For purposes of Paragraph 305(c), the effect of such emission reduction credits and/or offsets shall be to reduce the amount of credits and/or offsets available for Premcor's use under Paragraphs 299 and 300 as applicable to such Refinery. Such reduction of available credits and/or offsets will be for non-Clean Fuels projects and/or for Clean Fuels projects, as appropriate. If such reductions exceed the amount available under Paragraphs 299 and/or 300, the amount available for Premcor's use under these paragraphs shall be 0.0. For example, if a refinery generates 500 tons of SO_2 emissions reduction credits through compliance with the Addendum, it would have 50 tons available for use under Paragraph 300 [5% of 500 tons for general projects plus 5% of 500 tons for Clean Fuels projects]. If 30 tons of reductions were used in the existing permitting actions for a Clean Fuels project, such refinery would have 0 tons of available credits to use for Clean Fuels projects and 20 tons available for

general projects under Paragraph 300 of the Addendum; but if 70 tons of reductions were so used, such refinery would have 0 tons of credits available under Paragraph 300.

306. Reserved.

XVI. GENERAL RECORDKEEPING, RECORD RETENTION AND REPORTING

307. Premcor shall retain all records required to be maintained in accordance with this Addendum for a period of five (5) years or until Termination, whichever is longer, unless applicable regulations require the records to be maintained longer.

308. Following the first full calendar quarter after the Date of Entry of the Addendum, Premcor shall submit to EPA, within thirty (30) days after the end of such calendar quarter, and semiannually thereafter during the life of this Addendum a progress report ("Progress Report") covering each refinery owned and operated by Premcor. Each Progress Report shall be certified in accordance with Paragraph 309 and shall contain, for each such refinery, as applicable, the following:

a. progress report on the implementation of the requirements of Parts IV through XII of this Addendum;

b. a summary of emissions data that is specifically required by Parts IV through XII of this Addendum for the calendar quarter;

c. a description of any problems anticipated with respect to meeting the compliance programs of Parts IV through XII of this Addendum;

d. a description of implementation activity for all environmentally beneficial projects; and

e. any such additional matters as Premcor believes should be brought to the attention of the United States, EPA and/or the appropriate Plaintiff-Intervener.

309. To the extent that any provision of this Addendum specifically requires that any notice, report or other submission must be certified, such submissions shall contain the following certification. Such certification may be signed by the refinery manager or his/her designee, as provided in writing by

the refinery manager, provided the designee is a company employee with responsibilities related to environmental management or compliance.

> "I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, he information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

XVII. PENALTY

310. Within thirty (30) calendar days of the Date of Entry, Premcor shall pay a civil penalty, in the aggregate, of $4,250,000 as follows: (i) $2,750,000 to the United States, of which $40,000 will be a civil penalty paid to the EPA Hazardous Substances Superfund; (ii) $800,000 to Plaintiff-Intervener, the State of Ohio; and (iii) $700,000 to Plaintiff-Intervener, Memphis Shelby County Health Department.

311. Premcor's payment of civil penalty monies to the United States shall be made by Electronic Funds Transfer ("EFT") to the United States Department of Justice, in accordance with current EFT procedures, referencing the USAO File No. and DOJ Case Number 90-5-2-1-06811/1, and the civil action case name and case number of the United States District Court for the Western District of Texas. The costs of such EFT shall be Premcor's responsibility. Payment shall be made in accordance with instructions provided to Premcor by the Financial Litigation Unit of the U.S. Attorney's office for the Western District of Texas. Any funds received after 11:00 a.m. (est) shall be credited on the next business day. Premcor shall provide notice of payment, referencing the USAO File No. and DOJ Case Number, and the civil action case name and case number to the Department of Justice and to EPA, as provided in Paragraph 376 (Notice).

312. – 312C. Reserved.

312D. Premcor's payment of civil penalty monies to the State of Ohio shall be made by two corporate checks, as follows: one in the amount of $640,000, and the second in the amount of $160,000 with the notation that it is for "State of Ohio School Bus Fund (Fund 5CD)." Both checks

shall be made payable to the "Treasurer, State of Ohio" and delivered to the attorneys for the State of Ohio:

Martha Sexton, or her successor, Paralegal
Office of the Attorney General of Ohio
Environmental Enforcement Section
30 East Broad Street, 25th Floor
Columbus, OH 43215-3400

312E. Premcor's payment of civil penalty monies to the Memphis Shelby County Health Department shall be made by corporate check made payable to "Memphis Shelby County Health Department" and delivered to:

Robert Rogers, P.E.
Technical Manager
Memphis & Shelby County Health Department
Pollution Control Section
814 Jefferson Avenue
Memphis, TN 38105

313. Reserved.

314. Upon the Date of Entry, this Addendum shall constitute an enforceable judgment for purposes of post-judgment collection in accordance with Rule 69 of the Federal Rules of Civil Procedure, the Federal Debt Collection Procedure Act, 28 U.S.C. § 3001-3308, and other applicable federal authority. The United States and the Plaintiff-Interveners shall be deemed judgment creditors for purposes of collection of any unpaid amounts of the civil and stipulated penalties and interest.

315. No amount of the civil penalty to be paid by Premcor shall be used to reduce its federal or state tax obligations.

XVIII. RESERVED

XIX. SUPPLEMENTAL/BENEFICIAL ENVIRONMENTAL PROJECTS

A. Facility/Community-Specific Supplemental/Beneficial Environmental Projects

316. Premcor shall implement the following Supplemental Environmental Projects ("SEPs") in accordance with the timetables and requirements set forth in this Part. In implementing the SEPs in

this Part, Premcor shall spend no less than a total of $4,250,000. In the event that Premcor completes any of the SEPs identified in this Paragraph but does not expend the minimum specified amount for such SEP, Premcor may propose for EPA approval either (i) an alternative SEP, or (ii) to transfer the remaining funds to an existing SEP.

a. Port Arthur.

(1) Community-Based Health Project: Premcor shall implement at the Gulf Coast Health Center a program to enhance the Center's resources for the diagnosis and treatment of asthma, respiratory, cardio-pulmonary, or other illnesses, ailments, or health impacts that may be caused or exacerbated by exposure to air pollutants. Within one year of the Date of Entry of this Addendum, Premcor shall submit a Statement of Work ("SOW"), including a schedule for the completion of this SEP, that shall be subject to approval by EPA. Premcor shall spend not less than $1,000,000 on this SEP.

(2) Community Air Monitoring Project: Premcor shall acquire and place into operation a mobile air monitoring van, which shall be operated for the use and benefit of the Jefferson County Local Emergency Planning Committee ("LEPC"), to, inter alia, monitor and respond to emission events. Premcor shall use best efforts to coordinate with the LEPC regarding the implementation of this SEP. Within one year of the Date of Entry of this Addendum, Premcor shall submit a SOW, including a schedule and an estimated cost for the acquisition and operation of the mobile air monitoring van, that shall be subject to review by the LEPC and to approval by EPA. Premcor shall complete implementation of the approved SOW by no later than three years from the Date of Entry. Premcor shall spend not less than $50,000 on this SEP.

(3) Community School Shelter-in-Place Project: Premcor shall install at the Booker T. Washington Elementary School and the Memorial 9th Grade Center School in Port Arthur a "shelter-in-place" air control system to detect, isolate, and/or filter air pollutants and/or emissions that may result from emission events in the Port Arthur area. Premcor shall use best efforts to coordinate

with the appropriate school authority regarding the implementation of this SEP. Within one year of the Date of Entry of the Addendum, Premcor shall submit a SOW, including a schedule and an estimated cost for each shelter-in-place system and any related improvements, that shall be subject to review by the appropriate school authority and to approval by EPA. Premcor shall complete implementation of the approved SOW by no later than four years from the Date of Entry. Premcor shall spend not less than $500,000 on this SEP.

(4) Community Low Income Housing Emission Reduction Project: Premcor shall provide new low-NOx-emitting natural gas or electric water heaters to replace existing higher-emitting water heaters in low-income residences in the Port Arthur area. Within ninety (90) days of the Date of Entry of this Addendum, Premcor shall deposit not less than $50,000 into an escrow account established by Premcor for the purpose of implementing this SEP. Premcor shall, upon the written request of the South East Texas Regional Planning Commission, disburse such funds and any interest as directed by the Commission for purposes of implementing this SEP through the Commission's "Lighthouse Program." Premcor shall include an estimate of the anticipated emissions reductions resulting from this SEP in Premcor's reporting pursuant to Paragraph 318.c.

(5) Port Arthur VOC Reduction Project: Premcor shall install controls on unregulated and/or uncontrolled atmospheric relief vents at the Port Arthur Refinery that will route emissions from such vents to a control device to eliminate or significantly reduce the potential for fugitive VOC emissions. This project will be completed by no later than December 31, 2009. Premcor shall spend not less than $675,000 on this SEP.

b. Lima.

(1) City of Lima Traffic Signal Synchronization Study: Premcor shall develop and implement a Traffic Signal Synchronization study to optimize traffic flow in the City of Lima to reduce emissions from preventable vehicle idling resulting from inefficient traffic flow. Within ninety (90) days of Date of Entry of this Addendum, Premcor shall deposit not less than $200,000 into an

escrow account established by Premcor for the purpose of implementing this SEP. Premcor shall, upon written request by the City of Lima, disburse such funds and any interest as directed by the City for the purpose of implementing this SEP. Premcor shall include an estimate of the anticipated emissions reductions and health benefits resulting from this SEP in Premcor's reporting pursuant to Paragraph 318.c.

(2) Lima VOC Reduction Project: Premcor shall install controls on unregulated and/or uncontrolled atmospheric relief vents at the Lima Refinery that will route emissions from such vents to a control device to eliminate or significantly reduce the potential for fugitive VOC emissions. This project will be completed by no later than December 31, 2009. Premcor shall spend not less than $675,000 on this SEP.

(3) Lima Infrared Camera Imaging Project. Premcor shall perform a SEP designed to demonstrate the use of infrared imaging equipment to identify emissions from leaking components and other sources of fugitive VOC emissions at the Lima Refinery (the "Lima Infrared Camera Imaging Project"). Within ninety (90) days of the Date of Entry of this Addendum, Premcor shall submit a plan for the Lima Infrared Camera Imaging Project. The plan shall include a description of the project's overall objective(s), the procedures to be followed, a project budget (detailing expected equipment costs, laboratory costs, and contractor costs), and a schedule for performing and completing the project. The plan shall include procedures for the use of the infrared imaging equipment for a period of not less than one year to, inter alia, (i) periodically "sweep" the Lima Refinery to identify fugitive sources of VOC emissions from regulated and unregulated sources, and (ii) monitor valves, tanks, and other equipment to identify and minimize upsets and other uncontrolled VOC emissions during periods of startup and shutdown. Premcor shall include in its reporting pursuant to Paragraph 318.c an estimate of the emissions benefits associated with the Lima Infrared Camera Imaging Project. Premcor shall spend not less than $50,000 on this SEP.

(4) State and Local SEPs:

(i) State Particulate Matter Speciation Monitoring and Sampling Project: Within ninety (90) days of the Date of Entry of this Addendum, Premcor shall transfer no less than $200,000 to the Lake Michigan Air Directors Consortium to support PM 2.5 speciation monitoring and source sampling.

(ii) State Diesel Emission Reduction Project: Within ninety (90) days of the Date of Entry of this Addendum, Premcor shall transfer no less than $50,000 to the Ohio Environmental Council for the installation of diesel retrofit technologies to reduce emissions of particulates and ozone precursors from municipal trucks and/or buses.

c. Memphis:

(1) The Memphis Infrared Camera Imaging Project. Premcor shall perform a SEP designed to demonstrate the use of infrared imaging equipment to identify emissions from leaking components and other sources of fugitive VOC emissions at the Memphis Refinery (the "Memphis Infrared Camera Imaging Project"). Within ninety (90) days of the Date of Entry of this Addendum, Premcor shall submit a plan for the Memphis Infrared Camera Imaging Project. The plan shall include a description of the project's overall objective(s), the procedures to be followed, a project budget (detailing expected equipment costs, laboratory costs, and contractor costs), and a schedule for performing and completing the project. The plan shall include procedures for the use of the infrared imaging equipment for a period of not less than one year to, inter alia, (i) periodically "sweep" the Memphis Refinery to identify fugitive sources of VOC emissions from regulated and unregulated sources, and (ii) monitor valves, tanks, and other equipment to identify and minimize upsets and other uncontrolled VOC emissions during periods of startup and shutdown. Premcor shall include in its reporting pursuant to Paragraph 318.c an estimate of the emissions benefits associated with the Memphis Infrared Camera Imaging Project. Premcor shall spend not less than $50,000 on this SEP.

(2) Memphis Wastewater Treatment H_2S Reduction Project: Premcor shall, in conjunction with the City of Memphis, purchase and install vapor controls and undertake such

other measures as are necessary to reduce or eliminate H_2S off-gassing from the City of Memphis wastewater treatment works. Within 270 days from the Date of Entry of this Addendum, Premcor shall submit a Statement of Work, including a schedule and identifying the work to be performed by Premcor to implement this SEP, that shall be subject to review by the City of Memphis and approval by EPA. Premcor shall coordinate with the City of Memphis for the completion this SEP by no later than December 31, 2009. Premcor shall spend not less than $450,000 on this SEP

(3) State and Local SEPs:

(i) City of Memphis Ozone Reduction Project: Within ninety (90) days of the Date of Entry of this Addendum, Premcor shall transfer $250,000 to the Memphis Area Transit Authority ("MATA") to subsidize reduced bus fare services provided by MATA on high ozone, or "ozone alert," days to reduce the number of commuter passenger vehicles in use on high-ozone days in the Memphis area.

(ii) Port of Memphis Emission Reduction Project: Within ninety (90) days of the Date of Entry of this Addendum, Premcor shall transfer $50,000 to the International Port of Memphis for the installation of diesel retrofit technologies to reduce emissions of particulates and ozone precursors from diesel engines and vehicles at the Port.

317. Reserved.

B. General Project Requirements

318. a. Premcor is responsible for the satisfactory completion of the projects required under this Addendum in accordance with this Part XIX. Upon completion of each project set forth in Paragraphs 316, Premcor will submit to EPA and the applicable Plaintiff-Intervener a cost report certified as accurate under penalty of perjury by a responsible corporate official. If Premcor does not expend the project-specific amounts required under Paragraphs 316, Premcor will pay a stipulated penalty equal to the difference between the amount expended (as demonstrated in the certified cost

report(s)) and such project-specific required amount. The stipulated penalty will be paid as provided in Paragraph 321 (Payment of Stipulated Penalties).

b. By signing this Addendum and except with respect to Paragraph 316, Premcor certifies that it is not required, and has no liability under any federal, state, regional or local law or regulation or pursuant to any agreements or orders of any court, to perform or develop any of the projects identified in this Part XIX. Premcor further certifies that it has not applied for or received, and will not in the future apply for or receive: (1) credit as a Supplemental Environmental Project or other penalty offset in any other enforcement action for the projects set forth in this part, except with respect to Paragraph 316; (2) credit for any emissions reductions resulting from the projects set forth in this part in any federal, state, regional or local emissions trading or early reduction program; or (3) a deduction from any federal, state, regional, or local tax based on its participation in, performance of, or incurrence of costs related to the projects set forth in this part.

c. Premcor will include in each report required by Paragraph 308 a description of its progress under this Part XIX. In addition, the report required by Paragraph 308 of this Addendum for the period in which each project identified in Paragraphs 316 and/or 317 is completed will contain the following information with respect to such project(s):

i. A detailed description of each project as implemented;

ii. A brief description of any significant operating problems encountered, including any that had an impact on the environment, and the solutions for each problem;

iii. Certification that each project has been fully implemented pursuant to the provisions of this Addendum; and

iv. A description of the environmental and public health benefits resulting from implementation of each project (including quantification of the benefits and pollutant reductions, if feasible).

v. Premcor agrees that it must clearly indicate that these projects are being undertaken as part of the settlement of an enforcement action for alleged violations of the Clean Air Act and corollary state statutes in any public statements regarding these projects.

XX. STIPULATED PENALTIES

319. Premcor shall pay stipulated penalties to the United States or the appropriate Plaintiff-Intervener, where appropriate, for each failure by Premcor to comply with the terms of this Addendum; provided, however, that the United States or the appropriate Plaintiff-Intervener may elect to bring an action for contempt in lieu of seeking stipulated penalties for violations of this Addendum. For each violation, the amounts identified below shall apply on the first day of violation and shall be calculated for each incremental period of violation (or portion thereof). Stipulated penalties under subparagraphs 320(d) and 320(e) shall not start to accrue unless and until there is noncompliance with the concentration-based, rolling average emission limits identified in those paragraphs for 5% or more of the applicable unit's operating time during any calendar quarter. For those provisions where a stipulated penalty of either a fixed amount or 1.2 times the reasonable economic benefit of Premcor's delayed compliance is specifically identified below as available, the decision of which alternative to seek shall rest exclusively with the discretion of the United States and the appropriate Plaintiff-Intervener. In no event shall any penalty assessed against Premcor exceed the maximum civil penalty that may be assessed under the Clean Air Act 42 U.S.C § 7413 for any individual violation of this Addendum.

320. The following provisions are not intended, nor shall be construed, to be duplicative. Instead, any action or omission by Premcor that constitutes noncompliance with this Addendum shall give rise to a single stipulated penalty, hereunder, assessable to Premcor, except to the extent that any stipulated penalty provision specifically provides for additional penalties for continuing violations.

a. Requirements for NOx emission reductions from Covered Heaters and Boilers (Part IV):

i. Failure to achieve the interim emission reduction goals in accordance with Section IV.B: $100,000 per quarter.

ii. Failure to achieve the final emission reduction goals in accordance with Section IV.C or IV.G: $200,000 per quarter.

b. Failure to submit any written deliverable required under this Addendum:

Period of Delay	Penalty per Day
1st day through 30th day after deadline	$200
31st day through 60th day after deadline	$500
Beyond 60th day after deadline	$1,000

c. Failure to conduct any performance test, to install, calibrate and operate a CEMS or COMS or to establish PEMS operating parameters in accordance with Appendix S:

Period of Delay	Penalty per Day
1st day through 30th day after deadline	$500
31st day through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

d. Requirements for NOx emission reduction from FCCUs (Part V):

Failure to meet emission limits established pursuant to Part V: $750 for each calendar day in a calendar quarter on which the specified 7-day rolling average exceeds the applicable limit; $2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

e. Requirements for SO_2 emission reductions from FCCUs (Part VI):

i. Failure to meet final emission limits for the FCCU exhaust gas at each refinery: $750 for each calendar day in a calendar quarter on which the specified 7-day rolling average exceeds the applicable limit; $2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

ii. For failure to comply with any requirement of the SO_2 Reducing Catalyst Additives protocol, as set forth in Appendix E, including submission of the Demonstration Report, per unit, per day:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of the delayed compliance, whichever is greater

iii. For failure to comply with the plan required by Paragraph 85 for operating the FCCUs in the event of a Hydrotreater Outage, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$250
31st through 60th day after deadline	$1,000
Beyond 60th day after deadline	$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

f. Requirements for CO and particulate emissions controls for FCCUs (Part VII):

i. Failure to comply with CO emission limit: $750 for each calendar day in a calendar quarter on which the specified 1-hour average exceeds the applicable limit.

ii. Failure to comply with particulate emission limit: $3,000 for each calendar day in a calendar quarter on which the Refinery exceeds the specified limit.

g. Requirements for NSPS applicability to FCCU regenerators (Part VIII):

i. Failure to comply with NSPS emission limits, as required by Part VIII. per day per emission limit per emission point.

Period of Non-Compliance	Penalty per day
1st through 30th day	$2,500
Beyond 31st day	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

ii. For burning Fuel Oil in a manner inconsistent with the requirements of Paragraphs 113 and 114 per unit, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,750
Beyond 31st day	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

iii. For failure to comply with the NSPS Subpart J emission limits under Paragraphs 221 or 222 per unit, per day in a calendar quarter:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$2,000
Over 60 days	$3,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

iv. For failure to eliminate, control, and/or include and monitor all sulfur pit emissions in accordance with the requirements of Paragraph 226 , per unit, per day:

Period of Non-Compliance	Penalty per day
1st through 30th day	$1,000
31st through 60th day	$1,750
Beyond 60th day	$4,000 or an amount equal to 1.2 times the economic benefit of delayed compliance whichever is greater

v. For failure to comply with the Preventive Maintenance and Operation Plan under Paragraph 229 per refinery, per day:

Period of Delay or Non-Compliance	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day	$1,500
Over 60 days	$2,000

vi. Each rolling 12-hour average of sulfur dioxide emissions from any SRP in excess of the limitation at 40 C.F.R. § 60.104(a)(2)(i) that is not attributable to Startup, Shutdown, or Malfunction of the SRP, or that is not attributable to Malfunction of the associated TGTU:

Number of rolling 12-hr average exceedances within calendar day	Penalty per rolling 12-hr average exceedance
1 – 12	$350
Over 12	$750

vii. Operation of the SRP during Scheduled Maintenance of its associated TGTU (except that this paragraph shall not apply during periods in which Premcor is engaged in the Shutdown of an SRP for, or Startup of an SRP following, Scheduled Maintenance of the SRP): $25,000 per SRP per day per refinery.

h. Requirements for Benzene Waste NESHAP program enhancements (Part X):

i. Failure to timely conduct audit or compliance review and verification under Section X.C and X.G: $7,500 per month per review/audit.

ii. Failure to timely sample under Section X.K: $250 per week, per stream or $15,000 per quarter, per stream (whichever amount is greater, but not to exceed $75,000 per refinery per quarter).

iii. Failure to timely install carbon canister under Section X.E: $1,000 per day per canister.

iv. Failure to timely replace carbon canister under Section X.E: $1,000 per day per canister

v. Failure to perform monitoring under Section X.L: $500 per monitoring event.

vi. Failure to develop and timely implement training program under Section X.I: $10,000 per quarter per refinery

vii. Failure to mark segregated stormwater drains under Section X.L: $1,000 per week per drain

viii. If it is discovered by an EPA or state investigator or inspector, or their agent, that Premcor failed to include all benzene waste streams in its TAB, for each waste stream that is:

Less than 0.03 Mg/yr -	$250 per stream;
Between 0.03 and 0.1 Mg/yr -	$1,000 per stream;
Between 0.1 Mg/yr and 0.5 Mg/yr -	$5,000 per stream;
Greater than .5 Mg/yr -	$10,000 per stream.

i. Requirements for Leak Detection and Repair program enhancements (Part XI):

i. Failure to have written LDAR program under Section XI.B: $3,500 per week.

ii. Failure to implement the training program under Section XI.C: $10,000 per month, per program.

iii. Failure to timely conduct internal or external audit under Section XI.D: $5,000 per month per audit.

iv. Failure to timely implement internal leak definition under Section XI.G: $10,000 per month per process unit.

v. Failure to develop and timely implement initial attempt at repair program under Section XI.I: $10,000 per month.

vi. Failure to implement and begin more frequent monitoring program under Section XI.J: $10,000 per month per process unit.

vii. Failure to timely monitor under Section XI.J: $10,000 per week per process unit.

viii. Failure to have dataloggers and electronic storage under Section XI.K: $5,000 per month per refinery.

ix. Failure to timely establish LDAR accountability under Section XI.M: $3,750 per week per refinery.

x. Failure to establish new equipment standards under Section XI.N: $1,000 per month.

xi. Failure to conduct calibration drift assessment or to remonitor components (if and as required) under Section XI.O: $100 per missed event per day per refinery.

xii. Failure to attempt the drill and tap method under Section XI.Q: $5,000 per component.

xiii. For failure to comply with the requirement for chronic leakers set forth in Paragraph 212 : $5,000 per valve.

xiv. If it is discovered by an EPA or state investigator or inspector, or their agent, that Premcor failed to include all required components in its LDAR program: $87.50 per component.

j. Requirements for Permitting (Part XIV):

Failure to timely submit a reasonably or administratively complete permit application:

Period of Delay	Penalty per Day
Days 1-30	$800
Days 31-60	$1,500
Over 60 days	$3,000

k. Requirements for Supplemental/Beneficial Environmental Projects (Part IX):

For Failure to timely complete implementation of the projects required by Part IX:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$2,000.

l. Reserved.

m. Requirement to Escrow Stipulated Penalties: Failure to escrow stipulated penalties, as required by Paragraph 322 of this Part: $1,250 per day, and interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

n. As to any failure to complete an obligation pursuant to this Addendum that does not otherwise have a specified stipulated penalty, the United States, relevant Plaintiff-Intervener and Premcor may reach agreement on a stipulated penalty amount and such agreed stipulated penalty may be assessed and paid pursuant to this Part XX.

o. For failure to perform a CERCLA/EPCRA Compliance Review, submit a CERCLA/EPCRA Compliance Review Report, or perform corrective actions, as required by Paragraph 241a, per refinery:

Period of Non-Compliance	Penalty per day
1st through 30th day after deadline	$500
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$3,000

321. Premcor shall pay such stipulated penalties upon written demand by the United States or the appropriate Plaintiff-Intervener no later than sixty (60) days after Defendant receives such demand. Demand from either the United States or the appropriate Plaintiff-Intervener shall be deemed a demand from both, but the United States and the appropriate Plaintiff-Intervener shall consult with each other prior to making a demand. Stipulated penalties owed by Premcor shall be paid 50% to the United States and 50% to the appropriate Plaintiff-Intervener. Stipulated penalties shall be paid in the manner set forth in Part XVII unless the payment to the United States is less than $10,000, in which case such payment shall be certified or company check, payable to the appropriate United States Attorneys Office. A demand for the payment of stipulated penalties will identify the particular violation(s) to which it relates, the amounts demanded for each violation (as can be best estimated), the calculation method underlying the demand and the grounds upon which the demand is based. After

consultation with each other, the United States and the appropriate Plaintiff-Intervener may, in their unreviewable discretion, waive payment of any portion of stipulated penalties that may accrue under this Addendum. Where a single event triggers more than one stipulated penalty provision in this Addendum, only one such provision will apply.

322. Should Premcor dispute its obligation to pay part or all of a stipulated penalty, it may avoid the imposition of the stipulated penalty for failure to pay a penalty due to the United States or the appropriate Plaintiff-Intervener, by placing the disputed amount demanded by the United States or the Plaintiff-Intervener in a commercial escrow account pending resolution of the matter and by invoking the Dispute Resolution provisions of Part XXIII within the time provided in Paragraph 321 for payment of stipulated penalties. If the dispute is thereafter resolved in Premcor's favor, the escrowed amount plus accrued interest shall be returned to Premcor, otherwise the United States or the appropriate Plaintiff-Intervener shall be entitled to the escrowed amount that was determined to be due by the Court plus the interest that has accrued on such amount, with the balance, if any, returned to Premcor.

323. Nothing in this Addendum shall prevent the United States or the appropriate Plaintiff-Intervener from pursuing a contempt action against Premcor in lieu of demanding stipulated penalties hereunder and requesting that the Court order specific performances of the terms of this Addendum. Nothing in this Addendum authorizes the appropriate Plaintiff-Intervener to take action or make any determinations under this Addendum regarding Premcor refineries that are outside that Plaintiff-Intervener's state or that are not subject to this Addendum.

324. The United States and the appropriate Plaintiff-Intervener reserve the right to pursue any other non-monetary remedies to which they are legally entitled, including but not limited to injunctive relief for violations of the Addendum. Where a violation of this Addendum is also a violation of the Clean Air Act, its regulations or federally enforceable state law, regulation or permit, the United States (or the appropriate Plaintiff-Intervener) will not seek civil penalties where it already

has demanded and secured stipulated penalties for the same act or omission, nor will the United States (or the appropriate Plaintiff-Intervener) demand stipulated penalties for a violation of the Addendum if it has commenced litigation under the Clean Air Act for the same acts or omissions. Where a violation of this Addendum is also a violation of state law, regulation or a permit, the Plaintiff-Interveners will not seek civil or administrative penalties where they have already demanded and secured stipulated penalties for the same acts or omissions, nor will the Plaintiff-Interveners demand stipulated penalties for a violation of the Addendum if it has commenced litigation under the Clean Air Act for the same acts or omissions.

XXI. RIGHT OF ENTRY

325. Any authorized representative of EPA or a Plaintiff-Intervener, including their independent contractors, upon presentation of credentials, shall have a right of entry upon the premises of the Premcor Refineries at any reasonable time for the purpose of monitoring compliance with the provisions of this Addendum, including inspecting plant equipment, and inspecting and copying all records maintained as required by this Addendum. Nothing in this Addendum shall limit the authority of EPA to conduct tests and inspections under Section 114 of the Clean Air Act, 42 U.S.C. § 7414, or any other statutory or regulatory provision.

XXII. FORCE MAJEURE

326. If any event occurs which causes or may cause a delay or impediment to performance in complying with any provision of this Addendum (*e.g.* would require operation in an unsafe manner), and which Premcor believes qualifies as an event of force majeure, Premcor shall notify the United States and Plaintiff-Intervener in writing as soon as practicable, but in any event within forty-five (45) business days of when Premcor first knew of the event or should have known of the event by the exercise of due diligence. In this notice Premcor shall specifically reference this paragraph of this Addendum and describe the anticipated length of time the delay may persist, the cause or causes of the delay, and the measures taken or to be taken by Premcor to prevent or minimize the delay and the

schedule by which those measures will be implemented. Premcor shall adopt all reasonable measures to avoid or minimize such delays.

327. Failure by Premcor to substantially comply with the notice requirements of Paragraph 326, as specified above, shall render this Part voidable by the United States, after an opportunity for consultations with the Plaintiff-Intervener, as to the specific event for which Premcor has failed to comply with such notice requirement. If so voided, it shall be of no effect as to the particular event involved.

328. The United States, after an opportunity for consultation with the Plaintiff-Intervener, shall notify Premcor in writing regarding their claim of a delay or impediment to performance within forty-five (45) business days of receipt of the Force Majeure notice provided under Paragraph 326.

329. If the United States, after an opportunity for consultation with the Plaintiff-Intervener, agrees that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Premcor including any entity controlled or contracted by it, and that it could not have prevented the delay by the exercise of due diligence, the parties shall stipulate to an extension of the required deadline(s) for all requirement(s) affected by the delay by a period equivalent to the delay actually caused by such circumstances, or such other period as may be appropriate in light of the circumstances. Such stipulation may be filed as a modification to this Addendum by agreement of the parties pursuant to the modification procedures established in this Addendum. Premcor shall not be liable for stipulated penalties for the period of any such delay.

330. If the United States and appropriate Plaintiff-Intervener do not accept Premcor's claim of a delay or impediment to performance or Event of Force Majeure pursuant to this Addendum, then Premcor must submit the matter to this Court for resolution to avoid payment of stipulated penalties, by filing a petition for determination with this Court. In the event that the United States and Plaintiff-Intervener do not agree, the position of the United States on the Force Majeure claim shall become the final Plaintiffs' position. Once Premcor has submitted this matter to this Court, the United States and

appropriate Plaintiff-Intervener shall have twenty (20) business days to file a response to the petition. If Premcor submits the matter to this Court for resolution and the Court determines that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Premcor, including any entity controlled or contracted by it, and that it could not have prevented the delay by the exercise of due diligence, Premcor shall be excused as to that event(s) and delay (including stipulated penalties) for all requirements affected by the delay for a period of time equivalent to the delay caused by such circumstances or such other period as may be determined by the Court.

331. Premcor shall bear the burden of proving that any delay of any requirement(s) of this Addendum was caused by or will be caused by circumstances beyond its control, including any entity controlled or contracted by it, and that it could not have prevented the delay by the exercise of due diligence. Premcor shall also bear the burden of proving the duration and extent of any delay(s) attributable to such circumstances. An extension of one compliance date based on a particular event may, but does not necessarily, result in an extension of a subsequent compliance date or dates. Unanticipated or increased costs or expenses associated with the performance of obligations under this Addendum shall not constitute circumstances beyond the control of Premcor.

332. Notwithstanding any other provision of this Addendum, this Court shall not draw any inferences nor establish any presumptions adverse to any party as a result of Premcor delivering a notice of Force Majeure or the parties' inability to reach agreement.

333. As part of the resolution of any matter submitted to this Court under this Part, the parties by agreement, or this Court by order, may in appropriate circumstances extend or modify the schedule for completion of work under this Addendum to account for the delay in the work that occurred as a result of any delay or impediment to performance agreed to by the United States and the appropriate Plaintiff-Intervener or approved by this Court. Premcor shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified

schedule, except to the extent that such schedule is further modified, extended or otherwise affected by a subsequent force majeure event under this Part XXII.

XXIII. DISPUTE RESOLUTION

334. The dispute resolution procedure provided by this Part shall be available to resolve all disputes arising under this Addendum, except as otherwise provided in Part XXII regarding Force Majeure, provided that the party making such application has made a good faith attempt to resolve the matter with the other party.

335. The dispute resolution procedure required herein shall be invoked upon the giving of written notice by one of the parties to this Addendum to another advising of a dispute pursuant to this Part. The notice shall describe the nature of the dispute, and shall state the noticing party's position with regard to such dispute. The party or parties receiving such a notice shall acknowledge receipt of the notice and the parties shall expeditiously schedule a meeting to discuss the dispute informally not later than fourteen (14) days from the receipt of such notice.

336. Disputes submitted to dispute resolution shall, in the first instance, be the subject of informal negotiations between the parties. Such period of informal negotiations shall not extend beyond thirty (30) calendar days from the date of the first meeting between representatives of the United States, the appropriate Plaintiff-Intervener and Premcor, unless the parties' representatives agree to shorten or extend this period.

337. In the event that the parties are unable to reach agreement during such informal negotiation period, the United States and the appropriate Plaintiff-Intervener shall provide Premcor with a written summary of their collective position regarding the dispute. The position advanced by the United States and Plaintiff-Intervener shall be considered binding unless, within forty-five (45) calendar days of Premcor’s receipt of the written summary of the United States and Plaintiff-Intervener’s position, Premcor files with this Court a petition which describes the nature of the dispute. The United States shall respond to the petition within forty-five (45) calendar days of filing.

338. In the event the United States and the Plaintiff-Intervener make differing determinations or take differing actions that affect Premcor's rights or obligations under this Addendum, then as between the United States and the Plaintiff-Intervener the determination or action of the United States shall control.

339. Where the nature of the dispute is such that a more timely resolution of the issue is required, the time periods set out in this Part may be shortened upon motion of one of the parties to the dispute.

340. Notwithstanding any other provision of this Addendum, in dispute resolution, this Court shall neither draw any inferences nor establish any presumptions adverse to either party as a result of invocation of this Part or the parties' inability to reach agreement.

341. As part of the resolution of any dispute submitted to dispute resolution, the parties by agreement, or this Court by order, in appropriate circumstances, may extend or modify the schedule for completion of work under this Addendum to account for the delay in the work that occurred as a result of dispute resolution. Premcor shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule, subject to the Force Majeure provisions of Part XXII.

XXIV. EFFECT OF SETTLEMENT

342. This Addendum is not a permit; except as otherwise provided herein, compliance with its terms does not ensure compliance with any applicable federal, state or local laws or regulations governing air quality permitting requirements. Except as otherwise expressly provided herein, nothing in this Addendum shall be construed to be a ruling on, or determination of, any issue related to any Federal, state or local permit.

343. Definitions. For purposes of this Part XXIV (Effect of Settlement), the following definitions apply:

a. "Applicable NSR/PSD Requirements" shall mean: PSD requirements at Part C of Subchapter I of the Act, 42 U.S.C. § 7475, and the regulations promulgated thereunder at 40 C.F.R. §§ 52.21 and 51.166; the portions of the applicable SIPs and related rules adopted as required by 40 C.F.R. §§ 51.165 and 51.166; "Plan Requirements for Non-Attainment Areas" at Part D of Subchapter I of the Act, 42 U.S.C. §§ 7502-7503, and the regulations promulgated thereunder at 40 C.F.R. §§ 51.165 (a) and (b), 40 C.F.R. Part 51, Appendix S, and 40 C.F.R. § 52.24; Title V regulations or permit provisions that implement, adopt or incorporate the specific regulatory requirements identified above; and state or local regulations or permits that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

b. "Applicable NSPS Subparts A and J Requirements" shall mean the standards, monitoring, testing, reporting and recordkeeping requirements, found at 40 C.F.R. §§ 60.100 through 60.109 (Subpart J), relating to a particular pollutant and a particular affected facility, and the corollary general requirements found at 40 C.F.R. §§ 60.1 through 60.19 (Subpart A) that are applicable to any affected facility covered by Subpart J; any Title V regulations that implement, adopt or incorporate the specific regulatory requirements identified above; any applicable, federally-enforceable state or local regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified above, and any Title V permit provisions that implement, adopt or incorporate the specific regulatory requirements identified above; and any applicable state or local regulations, or permits enforceable by Plaintiff-Interveners that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

c. "Post-Lodging Compliance Dates" shall mean any dates after the Date of Lodging provided in the relevant sections of this Addendum. Post-Lodging Compliance Dates include dates certain (e.g., "December 31, 2004"), dates after Lodging represented in terms of "months after Lodging" (e.g., "Twelve Months after the Date of Lodging"), and dates after Lodging represented by actions taken (e.g., "Date of Certification"). The Post-Lodging Compliance Dates represent the dates

by which work is required to be completed or an emission limit is required to be met under the applicable provisions of this Addendum.

344. **Resolution of Liability Regarding the Applicable NSR/PSD Requirements.** With respect to emissions of the following pollutants from the following units, entry of this Addendum shall resolve all civil liability for violations of the Applicable NSR/PSD Requirements resulting from pre-Lodging construction or modification:

A. Emissions of SO_2, from the FCCUs at the Premcor Refineries.

B. Emissions of NOx from the FCCUs at the Premcor Refineries.

C. Emission of NOx and SO_2 from all heaters and boilers at the Premcor Refineries.

345. **Resolution of Liability for PM Emissions Under the Applicable NSR/PSD Requirements.** With respect to emissions of PM from the FCCUs at the Premcor Refineries, when Premcor accepts an emission limit of 0.5 pound PM per 1000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate) on a 3-hour average basis and demonstrates compliance by conducting a 3-hour performance test representative of normal operating conditions for PM emissions at a particular Refinery, then all civil liability shall be resolved for violations of the Applicable NSR/PSD Requirements relating to PM emissions at the relevant Refinery resulting from pre-Lodging construction or modification of the FCCU at that Refinery.

346. **Resolution of Liability for CO Emissions Under the Applicable NSR/PSD Requirements.** With respect to emissions of CO from the FCCUs at the Premcor Refineries, if and when Premcor accepts an emission limit of 100 ppmvd of CO at 0% O_2 on a 365-day rolling average basis and demonstrates compliance using CEMS at the relevant Refinery, then all civil liability shall be resolved for violations of the Applicable NSR/PSD Requirements relating to CO emissions at the relevant Refinery resulting from pre-Lodging construction or modification of the FCCU for that Refinery.

347. Reserved.

348. **Exclusions from Release Coverage Regarding Applicable NSR/PSD Requirements:** Notwithstanding the resolution of liability in Paragraphs 345-346, nothing in this Addendum precludes the United States and/or the Plaintiff-Interveners from seeking from Premcor injunctive relief, penalties, or other appropriate relief for violations by Premcor of the Applicable NSR/PSD Requirements resulting from: (1) construction or modification that commenced prior to the Date of Lodging of the Addendum, if the resulting violations relate to pollutants or units not covered by the Addendum; or (2) any construction or modification that commences after the Date of Lodging of the Addendum.

349. **Exclusions from Resolution of Liability Under Applicable PSD/NSR Requirements**. Increases in emissions from units covered by this Addendum, where the increases result from the Post-Lodging construction or modification as defined by 40 C.F.R 52.21 of any units within the Premcor Refineries are beyond the scope of the release in Paragraphs 345-346.

350. **Resolution of Liability Regarding Matters on Appendices Q, R, and T.** With respect to the enforcement matters identified in Appendix Q and Appendix R, and with respect to the emission events listed in Appendix T, entry of this Addendum shall resolve all civil liability for the violations identified, alleged or resolved in Appendix Q and Appendix R, and for the emission events listed in Appendix T, in the manner and to the extent set forth therein, from the date that the claims accrued up to the relevant Post-Lodging Compliance Dates.

351. **Resolution of Liability Regarding Applicable NSPS Subparts A and J Requirements**. With respect to Opacity and emissions of SOx, PM, and CO, as applicable, from all heaters and boilers, SRPs, fuel gas combustion devices, and the FCCUs at the Premcor Refineries, entry of this Addendum shall resolve all civil liability for pre-Lodging violations of the Applicable NSPS Subparts A and J Requirements from the date that the claims accrued up to the relevant Post-Lodging Compliance Dates.

352. **Prior NSPS Applicability Determinations**. Nothing in this Addendum shall affect the status of any FCCU, heater or boiler, fuel gas combustion device, or sulfur recovery plant currently subject to NSPS as previously determined by any federal, state, or local authority or any applicable permit.

353. **Resolution of Liability Regarding Benzene Waste NESHAP Requirements.** Entry of this Addendum shall resolve all civil liability for violations of the statutory and regulatory requirements set forth below in subparagraphs i. through iii. (the "BWON Requirements") that (1) commenced and ceased prior to the Date of Entry of the Addendum; and (2) commenced prior to the Date of Entry of the Addendum and/or continued past the Date of Entry, provided that the events giving rise to such violations are identified by Premcor in its BWON Compliance Review and Verification Report(s) submitted pursuant to Paragraphs 127 and 128 and corrected by Premcor, as required under section X.D.:

i. Benzene Waste NESHAP. The National Emission Standard for Benzene Waste Operations, 40 C.F.R. Part 61, Subpart FF, promulgated pursuant to Section 112(e) of the Act, 42 U.S.C. § 7412(e), including any federal regulation or permit that adopts or incorporates the requirements of Subpart FF by express reference, but only to the extent of such adoption or incorporation; and

ii. Any applicable, federally-enforceable state or local regulations or permits that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 353.i.

iii. Any applicable state or local regulations or permits enforceable by the Plaintiff-Interveners that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 353.i.

354. **Resolution of Liability Regarding LDAR Requirements.** Entry of this Addendum shall resolve all civil liability for violations of the statutory and regulatory requirements set forth below

in subparagraphs a. through c. that (1) commenced and ceased prior to the Date of Entry of the Addendum; and (2) commenced prior to the Date of Entry of the Addendum and continued past the Date of Entry, provided that the events giving rise to such violations are identified by Premcor in its Initial Audit Report(s) submitted pursuant to Paragraph 188 and corrected by Premcor as required under Paragraph 192:

a. LDAR Requirements. For all equipment in light liquid service and gas and/or vapor service, the LDAR requirements of Plaintiff-Interveners under state implementation plans adopted pursuant to the Clean Air Act or promulgated by EPA pursuant to Sections 111 and 112 of the Clean Air Act, and codified at 40 C.F.R. Part 60, Subparts VV and GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H, and CC;

b. Any applicable, federally-enforceable state or local regulations or permits that implement, adopt, or incorporate the specific regulatory requirements identified in Paragraph 354.a.

c. Any applicable state or local regulations or permits enforceable by the Plaintiff-Interveners that implement, adopt, or incorporate the specific regulatory requirements identified in Paragraph 354.a.

354A. **Resolution of Other Enforcement Matters**. In addition to the foregoing matters, this Addendum resolves, settles, and finally satisfies claims against Premcor asserted by or available to the United States and/or Plaintiff-Interveners to the extent specifically listed in Appendix Q, R, and T hereto. Entry of this Addendum shall resolve all civil and administrative liability of Premcor for the matters set forth in Appendix Q, R, and T in the manner and to the extent set forth therein.

355. **Reservation of Rights Regarding Benzene NESHAP and LDAR Requirements**. Notwithstanding the resolution of liability in Paragraphs 353 and 354, nothing in this Addendum precludes the United States and/or the Plaintiff-Interveners from seeking from Premcor injunctive and/or other equitable relief or civil penalties for violations by Premcor of Benzene Waste NESHAP and/or LDAR requirements that (1) commenced prior to the Date of Entry of this Addendum and

continued after the Date of Entry if Premcor fails to identify and address such violations as required by Paragraphs 127, 128, 188, 192 and/or section X.D of this Addendum; or (2) commenced after the Date of Entry of the Addendum.

356. **Audit Policy**. Nothing in this Addendum is intended to limit or disqualify Premcor on the grounds that information was not discovered and supplied voluntarily, from seeking to apply EPA's Audit Policy or any state or local audit policy to any violations or non-compliance that Premcor discovers during the course of any investigation, audit, or enhanced monitoring that Premcor is required to undertake pursuant to this Addendum.

357. **Claim/Issue Preclusion.** In any subsequent administrative or judicial proceeding initiated by the United States or the Plaintiff-Interveners for injunctive relief, penalties, or other appropriate relief relating to Premcor for violations of the PSD/NSR, NSPS, NESHAP, and/or LDAR requirements, not identified in Part XXIV (Effect of Settlement) of the Addendum and/or the Complaint:

a. Premcor shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, or claim-splitting as a result of this Addendum. Nor may Premcor assert or maintain any other defenses based upon any contention that the claims raised by the United States or the Plaintiff-Interveners in the subsequent proceeding were or should have been brought in the instant case. Nothing in the preceding sentences is intended to affect the ability of Premcor to assert that the claims are deemed resolved by virtue of Part XXIII of the Addendum.

b. Except in enforcing Paragraph 357.a. the United States and the Plaintiff-Interveners may not assert or maintain that this Addendum constitutes a waiver or determination of, or otherwise obviates, any claim or defense whatsoever of Premcor, or that this Addendum constitutes acceptance by Premcor of any interpretation or guidance issued by EPA related to the matters addressed in this Addendum.

357A. Nothing in this Addendum is intended to limit any rights, claims or defenses otherwise legally available to Premcor in response to a claim or allegation by any person not a party to this Addendum. Without limitation to the foregoing, Premcor expressly reserves the right to respond to any allegation by any person that Premcor is or has violated any provision of applicable law at a refinery governed by this Addendum, including by asserting that such alleged violations have been resolved or otherwise addressed by this Addendum, that principals of preemption, waiver, res judicata, claim preclusion, or issue preclusion bar such claim, or that Premcor is entitled to a set off against any liability for such claim in the form of civil or administrative penalties, injunctive relief or any other remedy as a result of the civil penalty payments, stipulated penalty payments, implementation of supplemental environmental projects and/or emission control projects, standards or limitation undertaken by Premcor under this Addendum.

358. **Imminent and Substantial Endangerment.** Nothing in this Addendum shall be construed to limit the authority of the United States and the Plaintiff-Interveners to undertake any action against any person, including Premcor to abate or correct conditions which may present an imminent and substantial endangerment to the public health, welfare, or the environment, or limit the authority of a Plaintiff-Intervener to take action under similar circumstances under state statute or common law that may be necessary to protect the public health, safety, welfare and the environment.

XXV. TERMINATION

359. This Addendum shall be subject to termination upon motion by the United States or Premcor under the conditions identified in Paragraph 363 below. Prior to seeking termination, Premcor must have completed and satisfied all of the following requirements of this Addendum:

a. Installation of control technology systems as specified in this Addendum;

b. Compliance with all provision contained in this Addendum, which compliance may be established for specific parts of the Addendum in accordance with Paragraph 360 below.

c. Payment of all penalties and other monetary obligations due under the terms of the Addendum; no penalties or other monetary obligations due hereunder can be outstanding or owed to the United States or the Plaintiff-Interveners;

d. Completion of the Supplemental Environmental Projects as set forth in Part XIX; and

e. Application for and receipt of permits incorporating the emission limits and standards required by Part XIV [Permits].

360. **Certification of Completion**. Prior to moving for termination, Premcor may certify completion for one or more Refineries subject to this Addendum of one or more of the following parts of the Addendum, provided that all of the related requirements for that Refinery have been satisfied:

i. Part V - NOx Emission Reductions from Fluid Catalytic Cracking Unit (including operation of the unit for one year after completion in compliance with the emission limit set pursuant to the Addendum);

ii. Parts VI, VII and VIII - SO_2 , CO, particulate and opacity Emission Reductions from Fluid Catalytic Cracking Unit (including operation of the unit for one year after completion in compliance with the emission limits set pursuant to the Addendum);

iii Parts IV and IX – Heaters and Boilers (including operation of the relevant units for one year after completion in compliance with the emission limit set pursuant to the Addendum);

iv. Parts X and XI – BWON and LDAR;

v. Part XII – SRPs and Flares

vi. Part XIX – Beneficial and Supplemental Environmental Projects

361. If Premcor elects to certify completion of any of the parts of the Addendum identified in Paragraph 360 for any Refinery subject to this Addendum, then Premcor may submit a written report

to EPA and the appropriate Plaintiff-Intervener describing the activities undertaken and certifying that the applicable Parts have been completed in full satisfaction of the requirements of this Addendum, and that Premcor is in substantial and material compliance with all of the other requirements of the Addendum. The report shall contain the following statement, signed by a responsible corporate official of Premcor:

> "To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

362. Upon receipt of Premcor's certification, EPA, after reasonable opportunity for review and comment by the Plaintiff-Interveners, shall notify Premcor whether the requirements set forth in the applicable Part(s) have been completed in accordance with this Addendum. The parties recognize that ongoing obligations under such Part(s) remain and necessarily continue (*e.g.*, reporting, record keeping, training, auditing requirements), and that Premcor's certification, as applicable, is that it is in current compliance with all such obligations.

a. If EPA concludes that the requirements of such Part(s) have not been fully complied with in accordance with this Addendum, EPA shall notify Premcor as to the activities that must be undertaken to complete the applicable Parts of the Addendum. Premcor shall perform all activities described in the notice, subject to its right to invoke the dispute resolution procedures set forth in Part XXIII (Dispute Resolution).

b. If EPA concludes that the requirements of the applicable paragraphs have been completed in accordance with this Addendum, EPA will so certify in writing to Premcor. This certification shall constitute the certification of completion of the applicable Parts for purposes of this Addendum. Nothing in this Paragraph 362 shall preclude the United States or the Plaintiff-Interveners from seeking stipulated penalties for a violation of any of the requirements of the Addendum regardless of whether a Certification of Completion has been issued under this paragraph. In addition,

nothing in this Paragraph 362 shall permit Premcor to fail to implement any ongoing obligations under the Addendum regardless of whether a Certification of Completion has been issued with respect to this paragraph of the Addendum.

363. At such time as Premcor believes that it has satisfied the requirements for termination set forth in Paragraph 359, it shall certify such compliance and completion to the United States and the Plaintiff-Interveners in writing. Unless either the United States or any Plaintiff-Intervener objects in writing with specific reasons within 120 days of receipt of Premcor's certification under this paragraph, Premcor shall then move and the Court may order that this Addendum be terminated. If either the United States or any Plaintiff-Intervener objects to the certification by Premcor then the matter shall be submitted to the Court for resolution under Part XXIII (Dispute Resolution) of this Addendum.

364. The Effect of Settlement provisions set forth in Part XXIV shall survive termination of this Addendum.

XXVI. GENERAL PROVISIONS

365. Effect of Refinery or Source Shutdown. Notwithstanding any provision of this Addendum, the permanent shutdown of any source or refinery subject to any requirement of this Addendum shall satisfy any provision in this Addendum applicable to such source or refinery, and Premcor shall not be obligated hereunder to continue operation of such source or refinery in order to institute or satisfy any requirement otherwise applicable to such source or refinery pursuant to the terms of the Addendum. The foregoing does not relieve Premcor's ongoing obligation to implement Part XIX [SEPs].

366. Other Laws. Except as specifically provided by this Addendum, nothing in this Addendum shall relieve Premcor of its obligation to comply with all applicable federal, state and local laws and regulations, including, but not limited to, more stringent standards. In addition, nothing in this Addendum shall be construed to prohibit or prevent the United States or Plaintiff-Interveners from

developing, implementing, and enforcing more stringent standards subsequent to the Date of Lodging of this Addendum through rulemaking, the permit process, or as otherwise authorized or required under federal, state, regional, or local laws and regulations. In addition, except as otherwise expressly provided in this Addendum, nothing in this Addendum is intended to eliminate, limit or otherwise restrict any compliance options, exceptions, exclusions, waivers, variances, or other right otherwise provided or available to Premcor under any applicable statute, regulation, ordinance, regulatory or statutory determination, or permitting process. Subject to Part XXIV [Effect of Settlement] and except as provided under Part XX [Stipulated Penalties], nothing contained in this Addendum shall be construed to prevent, alter or limit the United States' and Plaintiff-Interveners' rights to seek or obtain other remedies or sanctions against Premcor available under other federal, state or local statutes or regulations, in the event that Premcor violates this Addendum or of the statutes and regulations applicable to violations of this Addendum. This shall include the United States' and Plaintiff-Interveners' right to invoke the authority of the Court to order Premcor's compliance with this Addendum in a subsequent contempt action.

367. Changes to Law. In the event that during the life of this Addendum there is change in the statutes or regulations that provide the underlying basis for the Addendum such that Premcor would not otherwise be required to perform any of the obligations herein or would have the option to undertake or demonstrate compliance in an alternative or different manner, Premcor may petition the Court for relief from any such requirements, in accordance with Rule 60 of the Federal Rules of Civil Procedures ("F.R.Civ.P."). However, if Premcor applies to the Court for relief under this Paragraph, the United States and the Applicable Plaintiff-Interveners reserve the right to seek to void all or part of the Resolution of Liability reflected in Part XXIV [Effect of Settlement]. Nothing in this Paragraph is intended to enlarge the Parties' rights under Rule 60, nor is this Paragraph intended to confer on any Party any independent basis, outside of Rule 60, for seeking such relief. This Paragraph 367 does not

apply to Premcor's obligation to complete the supplemental/beneficial environmental projects referred to in Part XIX of this Addendum.

368. Reserved.

369. Liability for Stipulated Penalties. Liability for stipulated penalties, if applicable, shall accrue for violation of such obligations, and payment of such stipulated penalties may be demanded by the United States or Plaintiff-Intervener, as provided in this Addendum, provided that stipulated penalties that may have accrued between the Date of Lodging of this Addendum and the Date of Entry of the Addendum may not be collected by the United States or any Plaintiff-Intervener unless and until the Addendum is entered by the Court.

370. Contractors. Except where expressly prohibited, Premcor may rely upon a contractor to fulfill its obligations under this Addendum. Where Premcor uses one or more contractors to comply with material obligations under this Addendum, Premcor shall ensure that the contractor is aware of and in compliance with the requirements of this Addendum.

371. Third Parties. Except as otherwise provided herein, this Addendum does not limit, enlarge or affect the rights of any party to this Addendum as against any third parties.

372. Costs. The United States, Plaintiff-Interveners and Premcor shall each bear their own costs and attorneys' fees.

373. Public Documents. All information and documents submitted by Premcor to the United States and Plaintiff-Interveners pursuant to this Addendum shall be subject to public inspection, unless (a) subject to legal privileges or protection or (b) identified and supported as business confidential by Premcor in accordance with 40 C.F.R. Part 2, or any equivalent state statutes and regulations.

374. Public Comments. The parties agree and acknowledge that final approval by the United States and the appropriate Plaintiff-Intervener and entry of this Addendum is subject to the

requirements of 28 C.F.R. § 50.7, which provides for notice of the lodging of this Addendum in the Federal Register, an opportunity for public comment, and consideration of any comments.

375. Reserved.

376. Notice. Unless otherwise provided herein, notifications hereunder to or communications with the United States, the appropriate Plaintiff-Intervener, Premcor shall be deemed submitted on the date they are postmarked and sent either by overnight receipt mail service or by certified or registered mail, return receipt requested. When Premcor is required to submit notices or communicate in writing under this Addendum to EPA relating to one of the Premcor Refineries, Premcor shall also submit a copy of that notice or other writing to the applicable Plaintiff-Intervener for the refinery located in that state. Except as otherwise provided herein, when written notification or communication is required by this Addendum, it shall be addressed as follows:

As to the United States:
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, DC 20044-7611

United States Attorney
Western District of Texas
c/o U.S. Marshal Service
U.S. Courthouse
655 E. Durango
San Antonio, TX 78206

As to the U.S. Environmental Protection Agency:

Director
Air Enforcement Division (2242A)
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

with a hard copy to:
Director
Air Enforcement Division
Office of Enforcement and Compliance Assurance
c/o Matrix New World Engineering Inc.

120 Eagle Rock Ave., Suite 207
East Hanover, NJ 07936-3159

and an electronic copy to:
csullivan@matrixnewworld.com

With copies to the EPA Regional office where the relevant refinery is located:

EPA Region 4**:**

Director
Division of Enforcement and Compliance Assistance
U.S. Environmental Protection Agency,
Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104

EPA Region 5:

Director
Division of Enforcement and Compliance Assistance
U.S. Environmental Protection Agency,
Region 5
77 W. Jackson Blvd.
Chicago, IL 60604

Compliance Tracker
U.S. EPA Region 5
77 W. Jackson Blvd
Mail Code: AE-17J
Chicago, IL 60604
EPA Region 6:

Chief
Air, Toxics, and Inspection Coordination Branch (6EN-A)
Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, Texas 75202

As to Plaintiff-Intervener, the State of Ohio:

Teri J. Finfrock, or her successor
Air Program Supervisor
Office of the Attorney General of Ohio
Environmental Enforcement Section
30 East Broad Street, 25th Floor
Columbus, Ohio 43215-3400

Don Waltermeyer
Environmental Supervisor
Ohio Environmental Protection Agency
Division of Air Pollution Control
Northwest District Office
347 North Dunbridge Road
Bowling Green, Ohio 43402

As to Plaintiff-Intervener, Memphis Shelby County Health Department

Bob Rogers, P.E.
Manager, Pollution Control
Memphis & Shelby County Health Department
Pollution Control Section
814 Jefferson Avenue
Memphis, Tennessee 38105

As to Premcor:

Mr. Norman Renfro, Vice President
Health Safety & Environment
The Premcor Refining Group Inc. and Lima Refining Company
One Valero Place
San Antonio, TX 78249

Richard Walsh, Esquire
The Premcor Refining Group Inc. and Lima Refining Company
One Valero Place
San Antonio, TX 78249

Bart E. Cassidy, Esquire
Manko, Gold, Katcher & Fox, LLP
401 City Avenue, Suite 500
Bala Cynwyd, PA 19004

377. All EPA and Plaintiff-Intervener approvals or comments required under this Decree shall be in writing.

378. Any party may change either the notice recipient or the address for providing notices to it by serving all other parties with a written notice setting forth such new notice recipient or address.

379. The information required to be maintained or submitted pursuant to this Addendum is not subject to the Paperwork Reduction Act of 1980, 44 U.S.C. §§ 3501 et seq.

380. This Addendum shall be binding upon all Parties to this action, and their successors and assigns. The undersigned representative of each Party to this Addendum certifies that he or she is duly authorized by the Party whom he or she represents to enter into the terms and bind that Party to them.

381. Modification. This Addendum may be modified only by the written approval of the United States, the appropriate Plaintiff-Intervener and Premcor, or by Order of the Court. Additionally, it is anticipated that EPA, the appropriate Plaintiff-Intervener and Premcor may reduce the frequency or nature of reporting over time. Non-material modifications need not be filed with the Court to be effective, but material modifications shall be effective only upon filing with the Court. The United States will file non-material modifications with the Court on a periodic basis. For purposes of this Paragraph, non-material modifications include, but are not limited to, modifications to the frequency of reporting obligations and modifications to schedules that do not extend the date for compliance with emission limitations following the installation of control equipment or the completion of a catalyst additive program, provided such changes are agreed upon in writing between EPA and Premcor.

382. Continuing Jurisdiction. The Court retains jurisdiction of this case after entry of this Addendum to enforce compliance with the terms and conditions of this Addendum and to take any action necessary or appropriate for its interpretation, construction, execution, or modification. During the term of this Addendum, any party may apply to the Court for any relief necessary to construe or effectuate this Addendum.

383. This Addendum constitutes the entire agreement and settlement between the Parties. Prior drafts of the Addendum shall not be used in any action involving the interpretation or enforcement of the Addendum.

So entered in accordance with the foregoing this_____day of _____, 20__.

_____
United States District Court Judge

for the Western District of Texas

FOR PLAINTIFF, UNITED STATES OF AMERICA:

_____ Date_____

MATTHEW J. MCKEOWN
Acting Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
950 Pennsylvania Avenue, N.W.
Washington, DC 20530-00001

_____ Date_____

SUSAN AKERS
Senior Attorney
SCOTT BAUER
KATHERIN KANE
Trial Attorneys
Environment and Natural Resources Division
U.S. Department of Justice
1425 New York Avenue, N.W.
Washington, DC 20005

FOR U.S. ENVIRONMENTAL PROTECTION AGENCY:

_____ Date _____

GRANTA Y. NAKAYAMA
Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

FOR PLAINTIFF-INTERVENER, THE STATE OF OHIO:

MARC DANN
Attorney General of Ohio

By:_____ Date:_____
TERI J. FINFROCK
Assistant Attorney General
Environmental Enforcement Section
30 East Broad Street, 25th Floor
Columbus, Ohio 43215-3400

ATTORNEY FOR
PLAINTIFF/INTERVENER
STATE OF OHIO

FOR PLAINTIFF-INTERVENER, THE TENNESSEE COUNTY OF SHELBY AND CITY OF MEMPHIS:

_____ Date:_____

YVONNE S. MADLOCK
Director
Memphis and Shelby County Health Department
814 Jefferson Avenue
Memphis, Tennessee 38105

FOR DEFENDANT, THE PREMCOR REFINING GROUP INC. and LIMA REFINING COMPANY:

_____ Date_____

NORMAN L. RENFRO
Vice President
The Premcor Refining Group Inc. and Lima Refining Company
P. O. Box 696000
San Antonio, TX 78269-6000
Telephone: (210) 345-2790
Fax: (210) 345-4976

SUMMARY OF ATTACHED APPENDICES

Appendix A	Refinery Descriptions
Appendix B	Heater and Boiler Initial Inventory
Appendix C	FCCU Maximum Coke Burn Rate
Appendix D	Alternative Monitoring Plans for NSPS Subpart J Refinery Fuel Gas Guidance
Appendix E	SO_2 Catalyst Additive Protocol
Appendix F	AG Flaring Logic Diagram
Appendix G	Reserved
Appendix H	Reserved
Appendix I	Sustainable Skip Periods
Appendix J	Reserved
Appendix K	Acid Gas Flaring Devices
Appendix L	Reserved
Appendix M	Reserved
Appendix N	Hydrocarbon Flaring Devices
Appendix O	Specific Heater and Boiler NSPS Schedule
Appendix P	Reserved
Appendix Q	Schedule of Relevant Enforcement Matters
Appendix R	Mobile Source Provisions
Appendix S	PEM Requirements
Appendix T	Specific Emission Events

APPENDIX B

Initial Inventory of Covered Heaters and Boilers

Refinery	Source ID	Source Name/Description	Capacity, MMBtu/hr (HHV)	Capacity Basis	Permitted NOx Limit, lb/MMBtu	NOx CEMS?

This data is Confidential Business Information

APPENDIX C
Initial FCCU Annual Maximum Coke Burn Rates

Refinery	Annual FCCU Maximum Coke Burn, lb/hr

This data is Confidential Business Information

APPENDIX D

ALTERNATIVE MONITORING PLAN
for NSPS Subpart J Refinery Fuel Gas

Conditions for Approval of the Alternative Monitoring Plan for Miscellaneous Refinery Fuel Gas Streams

Refinery fuel gas streams/systems eligible for the Alternative Monitoring Plan (AMP) should be inherently low in H_2S content, and such H_2S content should be relatively stable. The refiner requesting an AMP should provide sufficient information to allow for a determination of appropriateness of the AMP for each gas stream/system requested. Such information should include, but need not be limited to:

- A description of the gas stream/system to be considered including submission of a portion of the appropriate piping diagrams indicating the boundaries of the gas stream/system, and the affected fuel gas combustion device(s) to be considered and an identification of the proposed sampling point for the alternative monitoring;

- A statement that there are no crossover or entry points for sour gas (high H_2S content) to be introduced into the gas stream/system. (This should be shown in the piping diagrams);

- An explanation of the conditions that ensures low amounts of sulfur in the gas stream (i.e., control equipment or product specifications) at all times;

- The supporting test results from sampling the requested gas stream/system using appropriate H_2S monitoring (i.e., detector tube monitoring following the Gas Processor Association's: Test for Hydrogen Sulfide and Carbon Dioxide in Natural Gas Using Length of Stain Tubes, 1986 Revision), at minimum:

    - for frequently operated gas streams/systems - two weeks of daily monitoring (14 samples);

    - for infrequently operated gas streams/systems, 7 samples shall be collected unless other additional information would support reduced sampling.

    Note: All samples are grab samples.

- A description of how the two weeks (or seven samples for infrequently operated gas streams/systems) of monitoring results compares to the typical range of H_2S concentration (fuel quality) expected for the gas stream/system going to the affected fuel gas combustion device. (e.g., The two weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out, and, therefore, should be representative of typical operating conditions affecting H_2S content in the gas stream going to the loading rack flare);
- Identification of a representative process parameter that can function as an indicator of a stable and low H_2S concentration for each fuel gas stream/system, (e.g., review of gasoline sulfur content as an indicator of sulfur content in the vapors directed to a loading rack flare);

- Suggested process parameter limit for each stream/system, the rationale for the parameter limit and the schedule for the acquisition and review of the process parameter data. The refiner will collect the proposed process parameter data in conjunction with the testing of the fuel gas stream's stable and low H_2S concentration.

The following shall be used for measuring H_2S in fuel gas within these types of AMPs unless the refiner requests, in writing, for approval of an alternative methodology:

- Conduct H_2S testing using detector tubes ("length-of-stain tube" type measurement);
- Detector tube ranges 0-10/0-100 ppm (N =10/1) shall be used for routine testing; and
- Detector tube ranges 0-500 ppm shall be used for testing if measured concentration exceeds 100 ppm H_2S.

Data Range and Variability Calculation and Acceptance Criteria

For each step of the monitoring schedule, sample range and variability will be determined by calculating the average plus 3 standard deviations for that test data set.

- If the average plus 3 standard deviations for the test data set is less than 81 ppm H_2S, the sample range and variability are acceptable and the refiner can proceed to the next step of the monitoring schedule.

  Note: 81 ppm is one-half the maximum allowable fuel gas standard under NSPS Subpart J, and the Agency believes that using 81 ppm acceptance criteria provides a sufficient margin for ensuring that the emission limit is not exceeded under normal operating conditions.

- If the data shows an unacceptable range and variability at any step (the average plus 3 standard deviations is equal to or greater than 81 ppm H_2S), then move to Step 7. Agency approval is required to proceed to the next step if the average plus 3 standard deviations is between 81 ppm and 162 ppm H_2S. As an example, approval may be granted based on a review of the test data and any pertinent information which demonstrates that sample variability during the test period was due to unusual circumstances. Supplemental test data may be taken to demonstrate that process variability is within the plan requirements. Data may be removed from the variability calculations for cause after agency approval.

- For Steps 3 and 4, if the data shows an unacceptable range and variability (the average plus 3 standard deviations is equal to or greater than 81 ppm H_2S), the source will drop back to the previous step's monitoring schedule.

- If at any time, one detector tube sample value is equal to or greater than 81 ppm H2S, then begin sampling as specified in Step 6. Note: Standard deviation cannot be calculated for a data set containing one point.

Monitoring Schedule for Approved AMPs

For gas streams which must meet product specifications for sulfur content, one time only detection tube sampling along with a certification that the gas stream is subject to product or pipeline specifications is sufficient for the AMP. If the gas stream composition changes (i.e., new gas sources are added), or if the gas stream will no longer be required to meet product or pipeline specifications, then the gas stream must be resubmitted for approval under the AMP.

The following are examples of streams needing one time only monitoring:

- Certified commercial grade natural gas;
- Certified commercial grade LPG;
- Certified commercial grade hydrogen;
- Gasoline vapors from a loading rack that only loads gasoline meeting a product specification for sulfur content.

For other gas streams, the H_2S content of each refinery fuel gas stream/system with an approved AMP shall be monitored per the following schedule:

Step 1:

The refiner will monitor the selected process parameter for each stream/system, according to the established process parameter monitoring or review schedule approved by the agency in the AMP, and at times when conducting H_2S detector tube sampling.

Step 2:

The refiner will conduct random detector tube sampling twice per week for each stream/system for a period of six months (52 samples). For fuel gas streams infrequently generated and combusted in affected fuel gas combustion devices (i.e., less frequent than bi-weekly), detector tube samples shall be taken each time the fuel gas stream is generated and combusted. A total of at least 24 samples shall be collected for infrequently generated gas streams. Monitor and record the selected process parameter in accordance with the established schedule, and at times when conducting H_2S testing. Move to Step 3 if the calculated range and variability of the data meets the established acceptance criteria. Submit test data (raw measurements plus calculated average and variability) to the agency quarterly.

Step 3:

The refiner will conduct random H_2S sampling once per quarter for a period of six quarters (6 samples) with a minimum of 1 month between samples. A minimum of 9 samples are required for infrequently generated and combusted fuel gas streams before proceeding to Step 4. Continue to monitor and record the selected process parameter in accordance with the established schedule, and at times when conducting H_2S testing. Move to Step 4 if the calculated range and variability of the data meets the established acceptance criteria. Submit test data (raw measurements plus calculated average and variability) to the agency quarterly.

Step 4:

The refiner will conduct random H_2S sampling twice per year for a period of two years (4 samples); sample randomly in the 1st and 3rd quarters with a minimum or 3 months between samples. Continue to monitor and record the selected process parameter in accordance with the established schedule, and at times when conducting H_2S testing. Move to Step 5 if the calculated range and variability of the data meets the established criteria. Submit test data (raw measurements plus calculated average and variability) to the agency semiannually.

Step 5:

The refiner will continue to conduct testing on semi-annual basis. Testing is to occur randomly once every semiannual period with a minimum of 3 months between samples. Continue to monitor and record the selected process parameter in accordance with the established schedule, and at times when conducting H_2S testing. If any one sample is equal to or greater than 81 ppm H_2S, then proceed to the sampling specified in Step 7. Note: Standard deviation cannot be calculated for a data set containing one point.

Step 6:

If, at any time, the selected process parameter data indicates a potential change in H_2S concentration, or a single detector tube sample value is equal to or greater than 81 ppm H_2S, then the fuel gas stream shall be sampled with detector tubes on a daily basis for 7 days (or for infrequently generated gas streams - 7 samples during the same period of an indicated change in H_2S concentration, or as otherwise approved by the agency). If the average detector tube result plus 3 standard deviations for those seven samples is less than 81 ppm H_2S, the date and value of change in the selected process parameter indicator and the sample results shall be included in the next quarterly report, and the refiner shall resume monitoring in accordance with the schedule of the current step. If the average plus 3 standard deviations for those seven samples is equal to or greater than 81 ppm H_2S, sampling shall follow the requirements of Step 7.

Step 7:

If sample detector tube data indicates a potential for the emission limit to be exceeded (the average plus 3 standard deviations is equal to or greater than 81 ppm H_2S), as determined in the Data Range and Variability Calculation and Acceptance Criteria or in Step 6, the refiner shall notify the agency of those results before the end of the next business day following the last sample day. The fuel gas stream shall subsequently be tested daily for a two week period (or 14 samples during the same event or as otherwise approved by the agency for infrequently generated gas streams). After the two week period is complete, sampling will continue once per week, until the agency approves a revised sampling schedule or makes a determination to withdraw approval of the gas stream/system from the AMP. Note: At any time, a detector tube value in excess of the 162 ppm limit is evidence that the emission standard has been exceeded.

General Provisions of Approved AMPs

Upon agency request, the refiner shall conduct a test audit for any gas stream with an approved AMP. The audit shall consist of daily detector tube samples collected over a one week period (7 samples). For fuel gas streams infrequently generated and combusted in affected fuel gas combustion devices, an audit shall consist of 3 consecutive sampling events. (e.g., Rail loading may occur once per month, an audit would consist of 3 consecutive loading events.) The United States Environmental Protection Agency, with due notice, reserves the right to withdraw approval of the AMP for any gas stream/system.

The source shall keep records of the H_2S detector tube test data and the representative process parameter data and fuel source for at least two years.

If a new fuel gas stream is introduced into a fuel gas stream with an approved AMP, the refiner shall again apply for an AMP and repeat Steps 1 - 5.

Example:

An AMP Application for a Hydrogen Plant PSA Off-Gas Stream Combusted Exclusively in the Hydrogen Plant Process Heater:

Process Description

Hydrogen production for the refinery by the steam methane reforming process. CO_2 is the primary impurity in the hydrogen produced; small amounts of CO and methane are also present. Unpurified hydrogen is passed over molecular sieve absorbent beds to remove these impurities. The off gas from regeneration of the absorbent beds is called PSA off-gas. It is sent to the hydrogen plant heater to recover heat and control CO emissions.

Piping Diagrams

Piping diagrams should be supplied to show monitoring location and to demonstrate that there is no potential for cross over or entry points for sour gas.

Basis for PSA Off-Gas Low H_2S Content

Since PSA off-gas is a byproduct of hydrogen purification, any H_2S in the PSA purge gas must come from the hydrogen unit feed. Levels of H_2S in the PSA gas are negligible because H_2S must be controlled to prevent
deactivation of the unit's catalyst

H_2S is a permanent catalyst poison. The hydrogen unit has 2 scrubbers to remove H_2S from the feed gas to protect the unit's catalyst from H_2S poisoning. The scrubbers are operated in series. The lead scrubber must exhibit at least a 70% reduction in H_2S content. If not, the scrubber is taken off line and the absorbent is replaced. After the absorbent is replaced, the scrubber is placed on line as the second scrubber in series. This maximizes the amount of H_2S removal and assures maximum scrubbing potential when one scrubber is off line for absorbent replacement.

Process Parameter Monitoring and Suggested Process Parameter Limit

Operation of the scrubbers is checked on a monthly basis with detector tubes. The feed gas H_2S content is measured at the inlet and outlet of the lead scrubber. If natural gas is used as hydrogen plant feed; both readings are below the 1 ppm detection limit. If refinery fuel gas is the feed gas, 30 ppm to 40 ppm H_2S is normally detected at the inlet. A lead scrubber outlet reading of 10 -12 ppm H_2S would trigger absorbent replacement. The suggested process parameter limit is 20 ppm H_2S at the lead H_2S absorber outlet. Absorber outlet H_2S measurements will be taken in conjunction with the PSA gas measurements during Steps 2 and 3.

APPENDIX E
Use of SO_2 Reducing Catalyst Additives to Reduce SO_2 at the Lima Refinery

This program to reduce SO_2 emissions at the Lima FCCU shall consist of a one-year "ramp-up" period and a demonstration period to establish appropriate SO_2 concentration based emission limits for the FCCU at a 10 weight % reducing catalyst additive rate.

1. **Definitions**
   a. "Baseline Total Catalyst Addition Rate" shall mean the daily average Total Catalyst, in pounds per day, added to an FCCU.
   b. "Pollutant Reducing Catalyst Additive" shall mean a SO_2 Reducing Catalyst Additive.
   c. "SO_2 Reducing Catalyst Additive" shall mean a catalyst additive that is introduced to an FCCU to reduce SO_2 emissions by reduction and adsorption.
   d. "Total Catalyst" shall mean all forms of catalyst added to the FCCU, including but not limited to base catalyst, equilibrium catalyst, and pollutant reducing catalyst.
   e. "Total Catalyst Addition Rate" shall mean the Total Catalyst added to an FCCU in pounds per day.
   f. "Weight % Pollutant Reducing Catalyst Additive Rate" shall mean:

$$\frac{\text{Amount of Pollutant Reducing Catalyst Additive in Pounds per Day}}{\text{Baseline Total Catalyst Addition Rate}} \times 100\%$$

2. **SO_2 Reducing Catalyst Additives – Selection**
   a. Within fifteen (15) days of the Date of Lodging, Premcor will select one of the EPA approved SO_2 reducing catalyst additives and submit a notification in writing to EPA as to the selected SO_2 reducing catalyst additive. This catalyst additive will be used for the duration of this protocol.
3. **SO_2 Reducing Catalyst Additives – "Ramp-Up" Period**
   a. Within thirty (30) days of the Date of Lodging, Premcor shall commence or continue use of the selected SO_2 reducing catalyst additive at the Lima FCCU.
   b. By no later than 12/31/2007, Premcor shall achieve a daily Total Catalyst Addition Rate for SO_2 reducing catalyst of at least additive addition rate of 10 weight %.
4. **SO_2 Reducing Catalyst Additives – Demonstration.**
   a. During a consecutive 12 to 24 month period (the "demonstration period") between 12/31/2007 and 12/31/2010, Premcor shall commence and complete a demonstration of the EPA-approved SO_2 reducing catalyst additive at a 10 weight % addition rate. During the period between

12/31/2007 and the end of the demonstration period, Premcor shall both physically add SO_2 reducing catalyst additive at a 10 weight % addition rate and operate the FCCU in a manner that minimizes SO_2 emissions, to the extent practicable without interfering with conversion, or processing rates, provided such cannot be reasonably compensated for by adjustment of other operating parameters.

b. Within two months of the end of the demonstration period, Premcor shall submit to EPA a report of the results of the demonstration period ("the "Demonstration Report"). The Demonstration Report shall include at a minimum the following information:

1. Regenerator flue gas temperature;
2. FCCU coke burn rate in pounds per hour;
3. FCCU feed rate in barrels per day;
4. FCCU feed API gravity;
5. Estimated percentage and, where available, actual percentage of each type of FCCU feed component (*i.e.* atmospheric gas oil, vacuum gas oil, etc.);
6. Estimated percentage, and where available, actual percentage by volume of the FCCU feed that is hydrotreated;
7. Total catalyst addition rate and catalyst circulation rates;
8. FCCU conversion rate;
9. SO_2 Reducing Catalyst Additive and addition rates, conventional combustion promoter addition rates, and/or Low NO_x Combustion Promoter addition rates in pounds per day;
10. Hourly and daily SO_2, NO_x, CO and O_2 concentrations; and
11. Any other parameters that Premcor identifies as important before the end of the demonstration period.

c. At any time prior to the deadline for submission of the Demonstration Report, Premcor may notify EPA that it agrees to comply with SO_2 emission limits of 25 ppmvd @ 0% O_2 on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis each at 0% O_2 for the Lima FCCU. If Premcor makes such a notification, the remaining requirements of this appendix for the Lima FCCU shall no longer apply and the limits shall become immediately effective.

5. <u>Establishing SO_2 Emissions Limits.</u>

a. Except where Premcor has notified EPA of its intent to comply with SO_2 emission limits of 25 ppmvd on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, at 0% oxygen, Premcor will propose, in the Demonstration Report, final 7-day rolling average and

365-day rolling average concentration-based (ppmvd) SO_2 emission limits, at 0% oxygen, for the Lima FCCU. Premcor will propose a 7-day rolling average concentration limit that will be numerically twice the concentration of the 365-day rolling average concentration limit. Premcor may propose alternative emissions limits to be applicable during startup of the FCCU, shutdown of the FCCU, or other alternative operating scenarios. Premcor will comply with the emission limits it proposes for the Lima FCCU beginning immediately upon submission of the Demonstration Report. Premcor will continue to comply with these limits unless and until Premcor is required to comply with the emissions limits set by EPA pursuant to the paragraphs below. Upon request by EPA, Premcor will submit any additional, reasonably available data that EPA determines it needs to evaluate the demonstration.

1. EPA will use the data collected during the demonstration period, as well as all other available and relevant information, to establish limits for SO_2 emissions for the Lima FCCU. EPA will establish a 365-day rolling average concentration-based (ppmvd) SO_2 emission limit at 0% oxygen. EPA will determine the limit based on: (a) the level of performance during the demonstration period; (b) a reasonable certainty of compliance; and (c) any other available and relevant information. EPA will also establish a 7-day rolling average concentration limit that will be numerically twice the concentration of the 365-day rolling average concentration limit.
2. EPA will notify Premcor of its determination of the concentration-based SO_2 emissions limit and averaging times for each FCCU. EPA may establish alternative emissions limits to be applicable during startup of the FCCU, shutdown of the FCCU, or other alternative operating scenarios. If EPA agrees with Premcor's proposed limits, Premcor will continue to comply with these limits. If EPA proposes different limits that Premcor does not dispute within thirty (30) days of receiving notification from EPA, Premcor will comply with the EPA-established limits by no later than thirty (30) days after notice. If Premcor disputes the EPA-established limits, Premcor will invoke the dispute resolution provisions of this Decree by no later than thirty (30) days after EPA's notice of the limits. During the period of dispute resolution, Premcor will continue to add SO_2 Reducing Catalyst Additives at the 10 weight % rate.
3. SO_2 emissions during periods of startup, shutdown, or Malfunction of an FCCU controlled by catalyst additives, or during periods of Malfunction of a Pollutant

Reducing Catalyst Additive system will not be used in determining compliance with the short-term SO_2 emission limits established pursuant to this appendix, provided that during such periods Premcor implements good air pollution control practices to minimize SO_2 emissions.

Appendix F

Logic Diagram for Paragraphs 250 – 253

ALL ACID GAS (AG) FLARING/TAIL GAS (TG) INCIDENTS
PORT ARTHUR HYDROCARBON FLARING (HCF) INCIDENTS

↓

250

Was the Root Cause:
- Failure to follow written procedures? Or
- Error from careless operation by the personnel charged with responsibility for the SRPs, TGU, or Upstream Process Units? Or
- Equipment failure due to failure by Valero to operate and maintain that equipment in a manner consistent with good engineering practices?
- For Port Arthur HCF Incidents, one of the root causes listed at 250.d. once the corresponding corrective action has been completed pursuant to Paragraph 245a?
- For Port Arthur AGF Incidents, one of the root causes listed at 250.e. once the corresponding corrective action has been completed pursuant to Paragraph 228?

Yes → Paragraph 260(a) applies unless Valero can establish a defense under the applicable provisions of Paragraph 253.

No ↓

251

Did the AG Flaring, TG Incident or PA Hydrocarbon Flaring Incident:
- Result in emissions of SO2 at a rate greater than 20 lbs/hr continuously for three consecutive hours or more and Valero did not follow the PMO Plan (for AG Flaring and TG Incident only)? Or
- Cause the total number of AG Flaring, TG Incidents in a rolling 12 month period to exceed 5? Or
- For Port Arthur HCF Incidents, cause the total number of HCF Incidents in a rolling 12 month period to exceed 10 for the first 3 years (or exceed 5 in a rolling 12 month period thereafter)?

Yes → Paragraph 260(a) applies unless Valero can establish a defense under the applicable provisions of Paragraph 253.

No ↓

252b

Is this the first time for the Root Cause of this AG Flaring, TG Incident or PA HCF Incident?

No →

252a

Is the Root Cause on the list of agreed-upon Malfunctions?

Yes → STOP

No → Paragraph 260(a) applies with the caveats set forth in Paragraph 252c, and unless Valero can establish a defense under the applicable provisions of Paragraph 253.

Yes ↓

Was the Root Cause sudden, infrequent, and not reasonably preventable through the exercise of good engineering practice?

No → Implement Corrective Action pursuant to Paragraph 245.

Yes ↓

Establish and update a list of agreed-upon Malfunctions → STOP

APPENDIX G - Reserved

APPENDIX H – Reserved

APPENDIX I

Sustainable Skip Period Program

The following skip rules will apply in lieu of 40 C.F.R. § 63.168(d)(2)-(4) and 40 C.F.R. § 60.483-2(b)(2)-(3).

1. Premcor may move to less frequent monitoring on a unit-by-unit basis using the following criteria:

    a. At process units that have less than 2 percent leaking valves for 2 consecutive months, the owner or operator shall monitor each valve once every quarter, beginning with the next quarter.

    b. After 2 consecutive quarterly leak detection periods with the percent of leaking valves less than or equal to 1 percent, the owner or operator may elect to monitor each valve once every 2 quarters.

    c. After 3 consecutive semi-annual leak detection periods with the percent of valves leaking less than or equal to 0.5 percent, the owner or operator may elect to monitor each valve once every 4 quarters.

2. Premcor must return to more frequent monitoring on a unit-by-unit basis using the following criteria:

    a. If a process unit on a quarterly, semi-annual or annual monitoring schedule has a leak percentage greater than or equal to 2 percent in any single detection period, the owner or operator shall monitor each valve no less than every month, but can again elect to advance to less frequent monitoring pursuant to the schedule in 1, above.

    b. If a process unit on a semi-annual or annual monitoring schedule has a leak percentage greater than or equal to 1 percent, but less than 2 percent in any single detection period, the owner or operator shall monitor each valve no less than quarterly, but can again elect to advance to less frequent monitoring pursuant to the schedule in 1, above.

    c. If a process unit on an annual monitoring schedule has a leak percentage greater than or equal to 0.5 percent but less than 1 percent in any single detection period, the owner or operator shall monitor each valve no less than semi-annually, but can again elect to advance to less frequent monitoring pursuant to the schedule in 1, above.

APPENDIX J – Reserved

APPENDIX K
Acid Gas Flaring Devices

Refinery	Acid Gas Flaring Device
Lima	SRU Acid Gas Flare
	LIU Flare
Memphis	Acid Gas Flare
	North Flare
	South Flare
Port Arthur	Flare No. 5
	Flare No. 12

APPENDICES L & M – Reserved

APPENDIX N
Hydrocarbon Flaring Devices

Refinery	Hydrocarbon Flare Name
Lima	FCC Flare
	LIU Flare
Memphis	North Flare
	South Flare
Port Arthur	Flare No. 13
	Flare No. 15
	Flare No. 18
	Flare No. 19
	Flare No. 20
	Flare No. 22
	Flare No. 23
	Flare B-103

APPENDIX O
Specific Heater and Boiler NSPS Schedule

Refinery	Heater/Boiler Name	NSPS Compliance Date
Lima	B004 (Crude Heater)	12/31/2009
	B001 (Vac II Heater)	12/31/2009
	B008 (HDS Heater)	12/31/2009
	B006 (U/F Heater)	12/31/2009
	B005 (Reformate Splitter Heater)	12/31/2009
	B007 (Reformate Regen. Heater)	12/31/2009
	B002 (Iso Heater)	12/31/2009
	B003 (Iso Heater)	12/31/2009

APPENDIX P
Reserved

APPENDIX Q

Resolved Enforcement Matters

With respect to the enforcement matters identified below, entry of this Addendum shall resolve all civil and administrative liability for the matters identified, alleged and/or resolved (in the manner and to the extent set forth herein and in the referenced enforcement documents but only to the extent Premcor is in continuing compliance with such post-lodging compliance dates), from the date that the claims accrued up to the Date of Lodging or the relevant Post-Lodging Compliance Date(s), if applicable.

I. LIMA REFINERY

A. Notices of Violation

Date	Type	Description of Alleged Violation
06/28/05	NOV	All potential violations identified in EPA's June 28, 2005 NOV arising from NEIC Inspections conducted 10/29/01 - 11/2/01 and 11/12/01 - 11/16/01 (and described in EPA-5-05-OH-16; *Proceedings Pursuant to Section 113 (a) (1) of the Clean Air Act*); including, but not limited to, LDAR and tank seal violations.
07/18/05	NOV/HPF	All potential violations identified in Ohio EPA's July 18, 2005 NOV arising from the PO25 Stack Test of 5/18/05; including, but not limited to, thermal oxidizer SO_2 emissions violations.
10/18/05	NOV/HPF	All potential violations identified in Ohio EPA's October 18, 2005 NOV arising from the PO25 Stack Test of 9/7/05; including, but not limited to, thermal oxidizer SO_2 emissions violations.
07/18/06	NOV/HPF	All potential violations identified in Ohio EPA's July 18, 2006 NOV arising from the PO25 Stack Tests on 5/25/06 and 5/26/06; including, but not limited to, thermal oxidizer SO_2 emissions violations.

B. Prior 114 Requests

Date	Description
12/07/00	All potential violations with respect to the Lima Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's December 7, 2000 Section 114 Information Request
10/22/04	All potential violations with respect to the Lima Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's October 22, 2004 Section 114 Information Request.
01/24/05	All potential violations with respect to the Lima Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's January 24, 2005 Section 114 Information Request

C. Other Matters

Inspections / Audits

1. All potential violations identified in or relating to the Ohio EPA Annual Air Inspections on June 6, 2002, May 20, 2003, May 19, 2004, May 4, 2005, and June 27, 2006.

Reporting

2. All potential violations disclosed in Malfunction Reports submitted to the Ohio EPA from January 1, 2001 through January 31, 2007.
3. All potential violations relating to Thermal Oxidizer Performance Tests; including the August 14, 2002 P025 thermal oxidizer NOx violation and related correspondence with the Ohio EPA, and the March 27, 2003 self disclosure to the Ohio EPA regarding NSPS J for NESHAPs gas.
4. All potential violations disclosed in Sulfur and Ash Reports submitted to the Ohio EPA from January 1, 2001 through January 31, 2007.
5. All potential violations disclosed in Excess Emissions Reports submitted to the Ohio EPA on from January 1, 2001 through January 31, 2007.
6. All potential violations disclosed in Benzene Transfer Operations Reports submitted to the U.S. EPA on March 5, 2001, June 4, 2001, December 3, 2001, June 4, 2002, December 3, 2002, March 3, 2003, June 4, 2003, September 3, 2003, December 1, 2003, March 1, 2004, and June 2, 2004.
7. All potential violations disclosed in Title V and PTI Deviation Reports submitted to the Ohio EPA from January 1, 2001 through January 31, 2007.

Miscellaneous

8. All potential violations relating to the alleged violations on January 22, 2001 and March 29, 2001 involving CEMS downtime at P002, P011 & P015 and P010.
9. All potential violations identified in and relating to the Follow-up Report of Malfunctions of Air Pollution Control Equipment submitted on October 9, 2006; including, but not limited to, the breakdown and repair of Tank 84, Tank 79, Tank 327, Tank 207, Tank 214, Tank 323, Tank 244, Tank 28, Tank 238, and Tank 216.

II. MEMPHIS REFINERY

A. Notices of Inquiry/Violation

Date	Type	Description of Alleged Violation
09/14/05	NOI	All potential violations identified in MSCHD's September 14, 2005 NOI arising from, but not limited to, excess $H2_S$ in fuel gas on 4/26/05 and 6/12/05. (MSCHD)
01/26/05	NOI	All potential violations identified in MCSHD's January 26, 2005 NOI arising from, but not limited to, exceedances of SO_2 NSPS at SRU Incinerator on 8/24/04 due to power outage. (MSCHD)

B. Prior 114 Requests

Date	Description
07/23/99	All potential violations with respect to the Memphis Refinery relating to information sought by EPA, and disclosed by Premcor and/or Williams Refining, LLC in response to EPA's July 23, 1999 Section 114 Information Request to Williams Refining, LLC.
06/03/03	All potential violations with respect to the Memphis Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's June 3, 2003 Section 114 Information Request to Premcor.
10/22/04	All potential violations with respect to the Memphis Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's October 22, 2004 Section 114

Date	Description
	Information Request to Premcor.
01/24/05	All potential violations with respect to the Memphis Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's January 24, 2005 Section 114 Information Request to Premcor.

C. Other Matters

Inspections / Audits

1. All potential violations identified in or relating to the USEPA NEIC - LDAR Compliance Inspection conducted March 26-29, 2001.
2. All potential violations identified in or relating to the USEPA Multimedia Site Inspection conducted on October 21-24, 2002, including information identified by EPA and/or disclosed by Premcor during the inspection.
3. All potential violations identified in or relating to the MSCHD Annual Inspection conducted on June 23, 2004 and June 30, 2005; including, but not limited to, issues regarding the recalculation of the cooling tower VOC emissions using the "uncontrolled" AP-42 factor and re-submission of data.
4. All potential violations identified in or relating to the USEPA EPCRA Region IV Inspection conducted on June 8, 2006.

Reporting

5. All potential violations relating to the failure to provide a thirty day notification before a performance test on the Cat Gas Hydrotreater unit. Notification was provided on July 8, 2005 and the test was conducted on July 26, 2005.
6. All potential violations disclosed in Continuous Monitoring System and Data Assessment Reports from January 1, 2001 through January 1, 2007.

Miscellaneous

7. All potential violations relating to the use of an incorrect span range for the oxygen analyzer in the No. 1 SRU CEMS from October 17, 2000 through May 17, 2006.
8. All potential violations relating to any delay in implementing Alternate Monitoring Plan for opacity at the FCCU.
9. All potential violations resulting from miscalculations of storage tank maximum TVP exceedances prior to September 2006.
10. All potential violations relating to a failure to conduct annual RATA or quarterly certifications on the CEMS at the Truck Rack prior to December 31, 2006.

III. PORT ARTHUR REFINERY

A. Notice of Violation

Date	Type	Description of Alleged Violation
06/16/05	NOV	All potential violations identified in EPA's June 16, 2005 NOV relating to flare emissions, SRU discharges, flare opacity, unit operation, and/or release reporting to NRC, including any related federally-enforceable state law violations.

B. Prior 114 Requests

Date	Description
12/07/00	All potential violations with respect to the Port Arthur Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's January 7, 2000 Section 114 Information Request to Premcor.
08/15/2003	All potential violations with respect to the Port Arthur Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's August 15, 2003 Section 114 Information Request to Premcor.
10/22/04	All potential violations with respect to the Port Arthur Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's October 22, 2004 Section 114 Information Request to Premcor.
01/07/2003	All potential violations with respect to the Port Arthur Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's January 7, 2005 Section 114 Information Request to Premcor.
01/24/05	All potential violations with respect to the Port Arthur Refinery relating to information sought by EPA, and disclosed by Premcor in response to EPA's January 24, 2005 Section 114 Information Request to Premcor.

C. Other Matters

Inspections / Audits

1. All potential violations identified in and/or relating to the EPA visit on July 5, 2001 regarding sandblasting at Tank 151 (looked like vapor).
2. All potential violations relating to FCC ESP opacity exceedances from January 1, 2001 through December 31, 2005.

Reporting

3. All potential violations identified in deviations reported or matters identified in the Dock Title V Semi-Annual Reports submitted from January 1, 2001 through January 31, 2007, for matters covered by Paragraphs 344-348, 351 and 353-354 of this Addendum.

Miscellaneous

4. All potential violations arising from failure to report speciated emissions from 1/15/99 emissions event on DCU-84.
5. All potential violations arising from potential VOC emission exceedances on Tanks 283 and 284 because of marine vessel pumping rates from May 1998 through June 1998.

APPENDIX R

Mobile Source Provisions

1. As provided by Paragraph 354a, entry of this Addendum shall resolve all civil liability of Premcor for the following violations of 40 C.F.R. Part 80 identified during the EPA Fuels Regulation site audit at the Memphis, Port Arthur, and Lima refineries in February and March 2005:

    a. All potential violations of 40 C.F.R. § 80.69 (reformulated gasoline blendstock for oxygenate blending testing and fuel quality assurance requirements) at the Port Arthur refinery;
    b. All potential violations of 40 C.F.R. §§ 80.2(gg) & 80.101(i) (batch homogeneity sampling and testing) at the Port Arthur refinery;
    c. All potential violations of 40 C.F.R. §§ 80.8 & 80.101(i) (representative certification sampling) at the Port Arthur refinery;
    d. All potential violations of 40 C.F.R. § 80.46 (reformulated gasoline analysis for olefins and aromatics) at the Port Arthur refinery;
    e. All potential violations of 40 C.F.R. § 80.46 (Grabner RVP instrument calibration) at the Port Arthur refinery;
    f. All potential violations of 40 C.F.R. § 80.46 (distillation instrument calibration) at the Port Arthur refinery;
    g. All potential violations of 40 C.F.R. §§ 80.74(a) & 80.365 (Reid Vapor Pressure logbook/recordkeeping) at the Port Arthur refinery;
    h. All potential violations of 40 C.F.R. § 80.46 (distillation instrument calibration) at the Lima refinery;
    i. All potential violations of 40 C.F.R. §§ 80.2(gg) & 80.101(i) (batch homogeneity sampling and testing) at the Lima refinery;
    j. All potential violations of 40 C.F.R. §§ 80.8 & 80.101(i) (ASTM sampling procedures) at the Lima refinery;
    k. All potential violations of 40 C.F.R. § 80.46 (in-line sample blending sampling) at the Memphis refinery;
    l. All potential violations of 40 C.F.R. § 80.46 (Reid vapor aeration) at the Memphis refinery; and
    m. All potential violations of 40 C.F.R. § 80.46 (maintenance logs) at the Memphis refinery.

2 To increase awareness of obligations to comply with federal and state mobile source regulations, Valero has formed a Clean Fuels Implementation Team consisting of representatives from its affiliates and subsidiaries' organizations. A copy of the charter for the CFIT outlining current roles and responsibilities and membership is attached to this Appendix. For the duration of this Consent Decree, Valero shall continue to support and operate the CFIT. In addition, within 6 months of the date of lodging, Premcor shall prepare a report detailing its standard operating procedures for ensuring compliance with the 40 C.F.R. Part 80 fuel requirements (including laboratory quality control measures) at the Premcor refineries, including but not limited to compliance with the requirements identified in Paragraph 1 of this Appendix R. This report shall be submitted to:

Erv Pickell, Fuels Team Leader
USEPA Office of Mobile Sources
12345 West Alameda Parkway
Suite # 214
Lakewood, CO 80228

APPENDIX S

PREDICTIVE EMISSIONS MONITORING SYSTEMS FOR HEATERS AND BOILERS WITH CAPACITIES BETWEEN 150 AND 100 MMBTU/HR

A Predictive Emissions Monitoring Systems ("PEMS") is a mathematical model that predicts the gas concentration of NOx in the stack based on a set of operating data. Consistent with the CEMS data frequency requirements of 40 C.F.R. Part 60, the PEMS shall calculate a pound per million Btu value at least once every 15 minutes, and all of the data produced in a calendar hour shall be averaged to produce a calendar hourly average value in pounds per million Btu.

The types of information needed for a PEMS are described below. The list of instruments and data sources shown below represent an ideal case. However at a minimum, each PEMS shall include continuous monitoring for at least items 3-5 below. Premcor will identify and use existing instruments and refinery data sources to provide sufficient data for the development and implementation of the PEMS.

Instrumentation:

1. Absolute Humidity reading (one instrument per refinery, if available)
2. Fuel Density, Composition and/or specific gravity - On line readings (it may be possible if the fuel gas does not vary widely, that a grab sample and analysis may be substituted)
3. Fuel flow rate
4. Firebox temperature
5. Percent excess oxygen
6. Airflow to the firebox (if known or possibly estimated)
7. Process variable data - steam flow rate, temperature and pressure - process stream flow rate, temperature & pressure, etc.

Computers & Software:

Relevant data will be collected and stored electronically, using computers and software. The hardware and software specifications will be specified in the source-specific PEMS.

Calibration and Setup:

1. Data will be collected for a period of 7 to 10 days of all the data that is to be used to construct the mathematical model. The data will be collected over an operating range that represents 80% to 100% of the normal operating range of the heater/boiler;
2. A "Validation" analysis shall be conducted to make sure the system is collecting data properly;
3. Stack Testing to develop the actual emissions data for comparison to the collected parameter data; and
4. Development of the mathematical models and installation of the model into the computer.

The elements of a monitoring protocol for a PEMS shall include:

1. Applicability

a. Identify source name, location, and emission unit number(s);

b. Provide expected dates of monitor compliance demonstration testing.

2. Source Description

a. Provide a simplified block flow diagram with parameter monitoring points and emission sampling points identified (e.g., sampling ports in the stack);
b. Provide a discussion of process or equipment operations that are known to significantly affect emissions or monitoring procedures (e.g., batch operations, plant schedules, product changes).

3. Control Equipment Description

a. Provide a simplified block flow diagram with parameter monitoring points and emission sampling points identified (e.g., sampling ports in the stack);
b. List monitored operating parameters and normal operating ranges;
c. Provide a discussion of operating procedures that are known to significantly affect emissions (e.g., catalytic bed replacement schedules).

4. Monitoring System Design

a. Install, calibrate, operate, and maintain a continuous PEMS;
b. Provide a general description of the software and hardware components of the PEMS, including manufacturer, type of computer, name(s) of software product(s), monitoring technique (e.g., method of emission correlation). Manufacturer literature and other similar information shall also be submitted, as appropriate;
c. List all elements used in the PEMS to be measured (e.g., pollutant(s), other exhaust constituent(s) such as O_2 for correction purposes, process parameter(s), and/or emission control device parameter(s));
d. List all measurement or sampling locations (e.g., vent or stack location, process parameter measurement location, fuel sampling location, work stations);
e. Provide a simplified block flow diagram of the monitoring system overlaying process or control device diagram (could be included in Source Description and Control Equipment Description);
f. Provide a description of sensors and analytical devices (e.g., thermocouple for temperature, pressure diaphragm for flow rate);
g. Provide a description of the data acquisition and handling system operation including sample calculations (e.g., parameters to be recorded, frequency of measurement, data averaging time, reporting units, recording process);
h. Provide checklists, data sheets, and report format as necessary for compliance determination (e.g., forms for record keeping).

5. Support Testing and Data for Protocol Design

a. Provide a description of field and/or laboratory testing conducted in developing the correlation (e.g., measurement interference check, parameter/emission correlation test plan, instrument range calibrations);
b. Provide graphs showing the correlation, and supporting data (e.g., correlation test results, predicted versus measured plots, sensitivity plots, computer modeling development data).

6. Initial Verification Test Procedures

a. Perform an initial relative accuracy test (RA test) to verify the performance of the PEMS for the equipment's operating range. The PEMS must meet the relative accuracy requirement of the applicable Performance Specification in 40 C.F.R. Part 60, Appendix B. The test shall utilize the test methods of 40 CFR Part 60, Appendix A;
b. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation, and typical of the anticipated range of operation, test the selected parameter for three RA test data sets at the low range, three at the normal operating range and three at the high operating range of that parameter, for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in duration;
c. Maintain a log or sampling report for each required stack test listing the emission rate;
d. Demonstrate the ability of the PEMS to detect excessive sensor failure modes that would adversely affect PEMS emission determination. These failure modes include gross sensor failure or sensor drift;
e. Demonstrate the ability to detect sensor failures that would cause the PEMS emissions determination to drift significantly from the original PEMS value;
f. The PEMS may use calculated sensor values based upon the mathematical relationships established with the other sensors used in the PEMS. Establish and demonstrate the number and combination of calculated sensor values which would cause PEMS emission determination to drift significantly from the original PEMS value.

7. Quality Assurance Plan

a. Provide a list of the input parameters to the PEMS (e.g., transducers, sensors, gas chromatograph, periodic laboratory analysis), and a description of the sensor validation procedure (e.g., manual or automatic check);
b. Provide a description of routine control checks to be performed during operating periods (e.g., preventive maintenance schedule, daily manual or automatic sensor drift determinations, periodic instrument calibrations);
c. Provide minimum data availability requirements and procedures for supplying missing data (including specifications for equipment outages for QA/QC checks);
d. List corrective action triggers (e.g., response time deterioration limit on pressure sensor, use of statistical process control (SPC) determinations of problems, sensor validation alarms);
e. List trouble-shooting procedures and potential corrective actions;
f. Provide an inventory of replacement and repair supplies for the sensors;
g. Specify, for each input parameter to the PEMS, the drift criteria for excessive error (e.g., the drift limit of each input sensor that would cause the PEMS to exceed relative accuracy requirements);
h. Conduct a quarterly electronic data accuracy assessment tests of the PEMS;
i. Conduct semiannual RA tests of the PEMS. Annual RA tests may be conducted if the most recent RA test result is less than or equal to 7.5%. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation and typical of the anticipated range of operation, test the selected parameter for three RA test data pairs at the low range, three at the normal operating range, and three at the high operating range of that parameter for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in duration.

8. PEMS Tuning

a. Perform tuning of the PEMS provided that the fundamental mathematical relationships in the PEMS model are not changed.
b. Perform tuning of the PEMS in case of sensor recalibration or sensor replacement provided that the fundamental mathematical relationships in the PEMS model are not changed.

APPENDIX T

SPECIFIC EMISSION EVENTS

With respect to the emission events identified below, entry of this Consent Decree shall resolve all civil and administrative liability for all reporting, regulatory and/or permit violations for the emission events identified below as of the Date of Lodging or the relevant Post-Lodging Compliance Date(s), if applicable.

Port Arthur Refinery

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
WWTU RTO		1/19/1997 through 1/30/98	Upsets at the Waste Water Treating Unit Thermal Oxidizer on the following dates: 1/18/97, 2/24/97 through 3/3/97, 9/4/97, 11/5/97, 11/12/97, 12/15/97, 12/23/97, 1/21/98, and 1/30/98.	
1241FCC CO9 Boiler	E-02-CO9	12/6/1998	Upset emissions, including CO.	
SRU		12/20/1998	Emissions event exceeding permit limits for the unit	
DCU 842	#15 Flare FIRE	12/23/1998	Emissions event exceeding permit limits for the unit	
HFAU-443; H-1; AVU 146; BH16	E-01-443; E -02-146; E-03-16BH	12/14/1999 through 12/18/1999	failure to comply with permit limits at several units	
9CO; 1241 FCC		12/17/1998 through 12/18/1998	Emissions associated with replacing tubes in soot blower.	23.5
842DCU; 542 SRU	#15 FLARE	12/20/1998	Level control valve needed cleaning and repairs. Caused 3.5 hr upset at 842DCU and 5 hour upset at 542 SRU.	5
542 SRU	E-15-FLARE	1/4/1999	Acid gas flaring event	
	E-01-1344	2/2/1999	Emissions event exceeding permit limits for PM emissions.	
1241FCC		5/11/1999	Lost all the DCS system on 1241 FCC Unit ,the unit lost control of flow rates and a revise flow occurred causing the unit to flare wet gas and absorber gas. The pilot light on # 22 flare had a flame out for one hour while 1241 FCC Unit was in the flare.	4.25
Precip Stack	Precip Stack	6/17/1999	Low feed rate upset emissions and failure to report	
Refinery		8/14/1999 through 8/18/1999	Refinery was hit by a electrical storm, storm knocked out all power to refinery, all units were forced to have an emergency shut down, all unit process gases had to be flared.	96

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
SRU-544/SRU 543/GFU244		8/20/1999	The sulfur recovery system received liquid hydrocarbon contamination in the acid gas feed from FCCU 1241. This upset is causing sour gases to be routed to the fuel system.	11
#9 CO Boiler	E-02-CO9	1/18/2000 through 1/28/2000	# 9 CO Boiler split tube forcing Blr S/D and diverted CO off 1241 FCC to Stack and the Electro-static Precipitator is also out of service as a result of 9CO Boiler shutdown.	240
FCC-1241	Bypass Stack	4/8/2000	FCC 1241 Unit lost the aeration air to the standpipe when a valve was inadvertently closed to pull a safety at SGRU1242, the same line supplied air to FCC 1241 aeration air line, the lost of air causing a reverse flow of charge and particulate to go out the by-pass stack to the atmosphere.	0.17
842 D.C.U.	F-15-FLARE	6/5/2000 through 6/6/2000	Wet gas compressor 104-J tripped out, resulting in flaring acid gas to #15 flare.	10.5
842 D.C.U.	F-15-FLARE	6/14/2000	104-J wet gas compressor tripped, resulting in flaring wet gas to flare.	1
544 SRU	# 5 Flare (E-05-FLARE)	7/20/2000	SRU 544 Trains 400 & 500 automatically shut down due to the loss of water to the high pressure boiler at the 400 train. As operators were attempting to increase water supply to the 400 train, the 500 lost the water supply to its high pressure boiler causing and automatic shut down of the unit. SRU 543 continued to operate, however, the H2S load on SRU 544 was routed to flare 5.	1.5
544 SRU	# 5 Flare (E-05-FLARE)	7/23/2000	Thunder storms damage a sub-station causing the SRUs to louse electrical power to its pump out pits pumps and charge was reduced to avoid the pits over flowing, went to the flare to reduce charge to units.	0.25
842 D.C.U.	#15 Flare	9/8/2000	104-J wet gas compressor shutdown.	2.3
842 D.C.U.		9/20/2000	DCU 842 wet gas compressor shut down and flaring.	
CO 9 Boiler	CO 9 Boiler stack	10/16/2000 through 10/17/2000	Number 9B fan had to be taken out of service due to high vibration. Stack had to be open to the atmosphere to take the electrostatic precipitators out of service. The CO remained in the boiler and only the 40% particulate going to the atmosphere.	5
843 D.C.U.		11/30/2000 through 12/3/2000	DCU 843 wet gas compressor shut down and caused flaring of wet gas to Flare 23.	72
SRU-544 400Train	#5 FLARE	12/8/2000	Lost boiler feed water level in 401C Boiler causing SRU 544, 400 Train to shut down, the lost of boiler feed water was caused by high pressure in refinery H2S system and possible high levels of hydrocarbons in the H2S systems	1.9
9CO Boiler and ESP		12/27/2000 through 1/12/2001	9CO Boiler and Electrostatic Precipitator Shutdown	
544 SRU	E-05-FLARE	12/27/2000	843 DC Unit sending hydrocarbon caused 544 to shutdown 402-B	1.5

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
545 SRU		1/29/2001	SRU -545 unit upset flaring acid gas.	8.08
843 DCU		1/31/2001	DCU 843 unit upset and flaring	
843 DCU		2/2/2001	DCU 843 unit upset and flaring	
FCCU 1241 ESP		3/15/2001 through 3/19/2001	FCCU 1241 Electro-Static Precipitator shutdown was due to an air blower malfunction.	110
SRU 545	E-03-SCOT	4/1/2001	Discharge of Sulfur Dioxide and Hydrogen Sulfide from unit occurred.	
Fuel Gas System	Fuel Gas System	10/12/2001	1241 FCC Amine Unit upset due to low Amine Titration	11.0
FGMD	F-FGMD	10/23/2001	FGMD out of compliance intermittently thru the shift due to upset on GFU-244 Amine Contactor.	10.3
AVU-146	F-19-FLARE	11/29/2001	A check valve failed in the open position. This allowed vacuum off-gas to be recalculated back to the suction of the compressor, which increased the compressor suction pressure, tripped the compressor and flared off-gas.	7.48
SRU-543/4	E-01-SCOT	11/30/2001	Boiler leak shut down 400 Train which pressured up Scot 1 stripper, vented to the flare.	0.1
DCU-843	E-23-FLARE	12/2/2001	Operator cracked Absorber Gas to 23 Flare to prevent pressure build up on Absorber Scrubber.	0.25
544, 500 train	402- B incinerator	12/4/2001	High refinery H2S make caused 500 train to go off ratio and caused SO2 to be as high as 2000ppm.	4.5
FCC-1241	F-1241	12/15/2001	Loss of differential pressure on "A&B" stand pipe. Change in the differential pressure on "A&B" stand pipe was observed on the DCS at the following times: 08:30, 13:48, 17:19, 17:38, 22:14, & 22:33.. Visible emissions were observed during the following times: 08:18-08:28, 13:40-13:45, & 14:40-14:45.	14.25
FCC-1241	F-1241	12/16/2001	Loss of differential pressure on "A" stand pipes. Change in the differential pressure on "A" stand pipe was observed on the DCS at the following time:11:38. Visible emissions were observed during the following times:12:15 to 12:25, 12:35 to 12:45, 12:55 to 13:05, 13:20 to 13:30, and 21:07 to 21:15	9.62
DCU-843	E-23-FLARE	12/22/2001 through 1/5/2002	Pluggage in the overhead condenser for D6600 (propane/butane splitter) at DCU 843 caused over-pressuring in the tower. A portion of the splitter overhead was sent to Flare 23 to maintain adequate pressure in the tower.	348.23
DCU-843	E-23-FLARE	12/25/2001	Suspected composition change (lighter ends) in the feed to the debutanizer caused a rapid increase in pressure on the tower. The pressure increase resulted in a PSV opening allowing debutanizer overhead gasses to the flare	2.75
DCU-843	E-23-FLARE	1/1/2002	Upset occurred at Delayed Coking Unit 843 and Hydrocracker Unit 942.	7.83

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
DCU-843	E-23-FLARE	1/2/2002 through 1/9/2002	An unexpected inability to transfer sour fuel gas to SGRU-1242 from DCU-843 and HCU-942 necessitated flaring at 23 Flare.	168.00
DCU-843	E-23-FLARE	1/3/2002	Unexpected high amounts of light end feed from AVU-146 (lost vacuum) resulted an increase in naphtha distillate and wet gas make. Excess wet gas required emergency flaring.	2.47
DCU-843	E-23-FLARE	1/4/2002	AVU 146, E-101exchanger had to be bypassed because of a leak. This resulted in high fuel gas make at DCU 843 and necessitated flaring at Flare 23.	0.58
SRU-544	E-05-FLARE	1/7/2002	SRU-544 Train 500 tripped off due to unexpected low combustion air flow on 401-JA air blower.	0.0
843 DCU	E-23-FLARE	1/13/2002	Debutanizer's SRV lifted when hit with light ends, resulting in smoking flare #23.	7.75
AVU-146	F-19-FLARE	1/14/2002	Fuses to main switchgear for P-110-B HDF product pump blew. Electricians had to kill 2300 to buss and started assessing electrical to other switchgear on this buss.	3.1
R.F.G. Sys.	Ref. Fuel Gas	1/30/2002	S.G.R.U. 1242s amine treater was overloaded with gas make from P.A.C.C.	2.0
DCU-843	E-23-FLARE	2/12/2002 through 2/25/2002	Flared sweet P-P from PSV-733.	309.50
COOLING TWR	E-432-CT	2/19/2002 through 3/11/2002	Leak in Debutanizer Overhead Exchanger C-6500.	475.58
HFAU-443	6341 LHSU SRV, F-15-Flare	3/11/2002	Excessive Propane in the Butane stream to 6341 LHSU pressured up the tower causing the SRV to open up.	0.25
WWTU-8742	E-01-T01	3/14/2002	Damper control arm linkage broke.	8.42
SRU-543/4	FU-SCOT	3/16/2002	F-402B has been intermittently out of compliance on SO2 emissions. The cause is thought to be feed related. The SO2 emissions reached @300ppm at its highest point.	5.6
843, 942, 545	E-23-FLARE, E-05-FLARE, E-02-SCOT, E-03-SCOT	3/19/2002 through 3/23/2002	Entergy (our third-party energy provider) experienced a power failure leading to several process unit shutdowns and upsets at Premcor.	126.92
SRU-543/4	E-02-SCOT	4/14/2002	Line Pressure to unit jump up faster than instruments could react and Scot II went out of ratio.	0.5

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
SRU 545	E-03-SCOT	4/16/2002 through 4/17/2002	Amine tower puked causing S02s to exceed. First time was from 21:15 to 21:35,then 22:25 to 22:50, then from 00:15 to 01:05	3.8
WWTU-8742	E-01-T01	4/19/2002	Regenerative thermal oxidizer at WWTU-8742 unexpectedly ceased operation due to failure of the oxidizer's thermal sensing device.	7.20
WWTU-8742	E-01-T01	5/4/2002	RTO shut down due to low level in the seal drum.	16.32
HCU-942	E-23-FLARE	5/7/2002	Hydrocracking Unit 942 experienced an upset due to the unexpected tripping of the K-2100 hydrogen recycle compressor.	8.03
SRU-543/4	E-05-FLARE	5/11/2002	Booster air blower for Scot 2 tripped out due to electric motor over amped and turbine spare did not get up to speed soon enough and caused 544's 400 and 500 train to shut down, resulting in acid gas line pressure to rise and this resulted in flaring H2S to #5 Flare. Also incinerator 402-B went out of compliance on SO2, due to opening acid gas recycle to 100% while trying to get booster blower(s) started.	1.00
FCC-1241	Refinery Fuel Gas	6/7/2002	FCC 1241 had their amine system try to puck over and caused the absorber gas to run high on PPM H2S, absorber gas is being spilled to refinery fuel as Chevron / Phillips Co. is not taking the full stream. The fuel system was out twice, from 11:34A.M. to 1:20 P.M. and then from 3:07P.M. to 4:41P.M..	5.1
WWTU-8742	E-01-T01	6/20/2002	RTO unexpectedly shutdown due to an electrical failure after technicians replaced the high vibration kill-switch.	1.08
WWTU-8742	E-01-T01	6/30/2002 through 7/1/2002	Reactive Thermal Oxidizer was shut down due to high bed temperatures.	36.67
SGRU-1242	E-103-Flare	7/1/2002	S.G.R.U. 1242's wet gas compressor K-2300-A shut down on suspected first stage high pressure, resulting in flaring wet gas to B-103 flare to control unit pressures on S.G.R.U. 1242 and A.V.U. 146.	1.10
SRU-545	E-03-SCOT	7/2/2002	Amine unit upset.	9.6
AVU-146	F-19-FLARE	7/6/2002	Crude unit AVU 146’s feed composition lighten up and produced too much wet gas for S.G.R.U. 1242’s wet gas compressor to handle. Too prevent K-2300-A from tripping off, started flaring to #19 flare.	5.77
SCOT II	FU-SCOT	7/8/2002 through 7/12/2002	Ratio analyzer on the 400 and 500 trains are not working.	100.0
WWTU-8742	E-01-T01	7/13/2002	Lightning strike caused loss of signal from RTO in the Control Room. Changing out communication card between RTO and Control Room tripped the RTO off line.	0.43

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
SCOT II	E-02-SCOT	7/14/2002 through 7/19/2002	Ratio analyzer on the 400 and 500 trains are not working properly.	122.2
SRU-545	E-03-SCOT	7/15/2002	High Pressure Boiler Water Feed Pump was unexpectedly lost, resulting in a temporary shutdown of SCOT III Tail Gas Incinerator.	13.77
WWTU-8742	E-01-T01	7/18/2002	Regenerative Thermal Oxidation Unit was shut down to perform maintenance work.	2.47
Sphere 2156	F-17-FLARE	8/3/2002 through 8/4/2002	Sphere 2156 was receiving Isobutane from terminals on two lines. A pipe line batch was being received on the 6" line and truck deliveries were being received on the 4" line. Combined rate of isobtuane caused the sphere to reach design operating pressure and regulator opened to flare to control sphere pressure.	9.50
DCU-843	E-23-FLARE	9/11/2002 through 9/17/2002	Unexpected control issues with the wet gas compressor at DCU-843 resulted in safety off-gassing of wet gas to the flare 9/11/02 12:15 - 12:47 pm. The subsequent interruption of fuel gas generation at 843 resulted in interruption of normal fuel flow to process heaters at 843 and 942. SRU-545 SCOT III foamed slightly due to the upset at 843. Minimal additional flaring of wet gas took place on 9/17/02 and 9/18/02 while vendor representative adjusted the compressor controls, bringing final closure to the upset.	163.83
SRU-543/4	E-05-FLARE	10/7/2002	A fuse blew on 400 Train Main Air Blower causing additional controls to trip on the same PLC due to increased voltage. This caused 400 and 500 trains to go down therefore sending acid cas to Flare #5.	0.20
SRU-543/4	E-02-SCOT	10/8/2002	The flame on 402-B Incinerator went out due to the main air regulators on 400 and 500 trains causing excessive high temperature at SCOT II.	0.75
DCU-843	DCU-843E-01-02-02-843	10/14/2002	The amine temperature was low and did not allow for proper treatment of the fuel gas in the fuel gas scrubber. The fuel gas was above 80ppm from 4:05am to 6:07am and 6:32am to 7:34am. BTU value was 1165 and the ppm was 221 and 282.	3.5
DCU-843	E-01-02-03-843	10/15/2002	Amine temperatures dropped too low during cold rain storm.	0.7
DCU-843	E-01-02-03-843	10/16/2002	Amine temperatures dropped too low during the cold night.	0.6
DCU-843	DCU-843 E-01-02-03	10/16/2002	Temperature of amine dropped causing a failure to treat fuel gas.	0.4
SRU-545	E-01-SCOT, E-03-SCOT, FLARE-05	10/29/2002 through 10/30/2002	Analyzer maintenance unexpectedly triggered a shutdown of incinerator H-9002. Subsequent backpressure upstream of the incinerator due to a diverter valve malfunction caused a safety shutdown of Trains 100 and 200 of SRU-545. Acid gas normally charged to 545 was immediately diverted to SRU-543 and SRU-544, resulting in flaring at Flare#5 (10:47 am - 12:30 pm) and temporarily disabled incinerator 402-B (10:57 am - 11:24 am).	19.22

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
SRU-544	E-02-SCOT, E-05-Flare	10/29/2002	An unexpected loss of excess oxygen due to a malfunctioning pressure controller (PC0424) caused both 400 and 500 trains at SRU 544 to reduce the available processing capability. Recycle H2S was sent to Flare #5 from the SCOT Unit.	1.37
SGRU-1242	F-103-FLARE	10/29/2002 through 10/30/2002	Lost the motor on P-2825B reactivator pump due to bad bearings. P-2825A had been pulled that morning and is already in the shop having the bearings replaced.	16.58
SGRU-1242	F-103-FLARE	10/31/2002 through 11/3/2002	Gas to the 2300 A & B compressors was light and during switching of compressor lost suction for a short period of time causing wet gas to be flared. Also during this time the volume of wet gas to compressor was low.	100.23
FCC-1241	F-22-FLARE; E-01-ESP	11/13/2002	An unreportable FCC Unit reverse flow upset occurred at 7:45 am to 7:47 am. Total duration 2 minutes and opacity was 100% from E-01-ESP. After this upset reverse flow, the air line to HC-1602 broke and caused the regulator to close. The tower over-pressured and the safety paid off to the flare from 9:05 am to 9:48 am.	0.72
SCOT III	FU-SCOT	11/21/2002 through 11/22/2002	9002 Incinerator stack went out of compliance at approximately 11:45. Operators can not find any indications on the unit to suggest a reason for this excursion. The only change was they had just put the sour water stripper in service and they lost temperature indicators on both the 100 and 200 train reactors. There were visible emissions to the Sulfur Pit Stack.	16.9
WWTU-8742	E-01-T01	11/22/2002 through 11/24/2002	The hydraulic cylinder on the damper arm failed at the RTO. Downtime periods: 11-22-02, 10:31pm to 11-23-02, 6:30pm; 11-24-02, 7:33am to 11-24-02, 2:37pm.	29.60
WWTU-8742	E-01-T01	12/3/2002	Flame safety trip of the No. 2 burner due to control valve malfunction of a gas valve indicator.	14.10
SGRU-1242	F-136bCT	12/5/2002 through 12/31/2002	Cooling towers sampled during TCEQ inspection revealed potential leaking exchangers at SGRU-1242. Subsequent review by operations personnel and EFSI (third party contractors) quickly detected a leak at C-2350 C/D HP Separator Cooler.	634.48
SRU-543, SRU-544 (400 TRAIN)	E-05-FLARE, E-01-SCOT, E-02-SCOT	12/23/2002	SRU-543, SCOT I, SRU-544 (400 TRAIN) and both incinerators (402B & F101) shut down due to electrical circuit failure. The failure may be weather related. H2S was flared at Flare No.5.	1.07
SRU-543/4	E-05-FLARE, E-01-SCOT E-02-SCOT	12/29/2002	SRU 543, SCOT I, SRU 544 (400 Train), the Sour Water Stripper, and both incinerators (402B & F101) shut down due to electrical circuit failure.	0.78
WWTU-8742	E-01-T01	12/29/2002	A loss of power caused the air blower, KM-5001B to shutdown which resulted in a loss of air to the seal drum. Please refer to the attached investigation report.	2.90
DCU-843	E-01-02-03	12/31/2002	Temperature fell off on circ.amine	0.9

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
DCU-843	E-01-02-03-843	12/31/2002	Amine unit over loaded.	0.3
SRU-543/4	E-05-FLARE	12/31/2002	Lic-710A/B malfunctioned and caused SWS to S/D. PIC-722 closed off and had trouble re-setting and caused to pressure up and go to flare.	4.15
47 Pump House	F-PH41	1/8/2003 through 1/9/2003	Temporary 6 Fuel pump and associated piping was involved in 3-alarm fire.	0.97
GFU 243	E-20-FLARE	1/13/2003 through 1/27/2003	SRV-30 on the amine regenerator was leaking to the No. 20 flare. It was determined that an improperly installed O-ring caused the leak.	338.00
FCC-1241	F-22-FLARE	1/22/2003	Emergency flaring from the P-P Contactor occurred due to unexpected pluggage in the P-P product line at FCC-1241 during normal contractor (Nalco) caustic injection. Flared P-P product from 8:40 pm until 9:30 pm due to the unit pressuring up and line plugging.(200 bp/h for 50 minutes).	0.83
WWTU-8742	E-01-T01	4/7/2003	The Regenerative Thermal Oxidizer at WWTU-8742 unexpectedly shutdown.	1.87
GFU-243	F-FGMD	4/10/2003	Fuel Gas Mix Drum when out of compliance due to problems at GU-243 amine treating system.	3.00
GFU-244	F-02-FLARE	5/12/2003	Safety relief valve #621 off the Hot High Pressure Separator opened to #2 Flare.	0.13
AVU-146	F-19-FLARE	6/3/2003	Power outage on the south side 480 Volt buss in the MCC room. Wiring from the buss to the line side of three breakers shorted to ground or phase to phase causing an arc that took out a total of four starters. This, in turn, over-amped the main line breaker and tripped the buss.	0.95
WWTU-8742	E-01-T01	6/19/2003 through 6/20/2002	The Regenerative Thermal Oxidizer experienced an emergency shutdown.	21.30
SRTF	F17FLARE	6/23/2003	Maintenance at pump J-15 (pump casing prepared for pulling) required venting to flare product butane via 1" line.	1.00
SRU-543/4	E-05-FLARE	7/24/2003	An unexpected reduction of instrument air system pressure resulted in a brief flaring event at SRU-544.	0.23
WWTU-8742	E-01-T01	8/1/2003	Regenerative Thermal Oxidizer at WWTU-8742 experienced an unexpected high temperature shutdown alarm in the RTO retention chamber.	13.05

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
SRTF	F17FLARE	8/14/2003	About 2 and a half hours after receiving ISO and while still receiving excess C4 raffinate from 443 Alkylate Unit, the pressure on M-3 drum (high pressure accumulator) went from 82 to 95 pounds. This increase caused the flare regulator to open to lower the pressure. The regulator would open for about 1 minute and stay closed 2 to 10 minutes during the duration of this incident. M-3 drum pressured up again tonight at 10:30pm (2 hours after receiving ISO) and the regulator opened up to #17 flare.	6.00
SRU-545	E-03-SCOT	8/23/2003	H-9003 Incinerator out of compliance on SO2 from 3:45 am to 8:15 am due to low level in the Sulfur Pit and possible pit fire. Operators also checked the operations of the Amine System and found it to be functioning properly.	4.50
SGRU-1242	F-136BCT	9/4/2003 through 9/5/2003	A suspected leak in an exchanger on SGRU-1242 was indicated during the monthly testing using the El Paso method sampling by EFSI (third-party contractor)	25.00
SRU-543/4	E-05-FLARE E-02-SCOT	9/9/2003	SRU-544 Trains 400 and 500 unexpectedly ceased operations.	1.98
MC-24/25	MC-24/25	10/3/2003	The Marine Vapor Combustors MC-24 and MC-25 operated at 100% opacity for more than 6 minutes.	1.10
DCU-843, HCU-942, SRU-543, SRU-545, FCCU-1241, SCOT I, SCOT III	E-23-FLARE E-03-SCOT F-22-FLARE	10/14/2003	Both electrical feeds provided by Entergy to the refinery were lost as a result of a problem Entergy encountered. The power loss caused DCU-843 (Fin: DCU-843), HCU-942 (Fin: HCU-942), and SRU-545(Fin:SRU-545) to begin emergency shutdown procedures.	1.62
SRU-545	E-03-SCOT	10/22/2003	Train 100 shutdown at SRU-545. Excess emissions were documented at the incinerator at SCOT III (FIN:SCOT-III).	2.32
SRU-543/4	E-05-FLARE	10/29/2003 through 10/30/2003	Brief emergency flaring (approx. 10 minutes) resulted from an unexpected trip of SRU-544 400 Train.	5.10
HCU-942	F-942	10/29/2003 through 10/30/2003	Recycle Hydrogen Compressor at HCU 942 unexpectedly shut down. Recycle gas was routed to Flare No. 23 (FIN: F-23-Flare & EPN: F-23-Flare). In addition, HCU 942 (FIN = HCU-942) began shut down procedures by depressuring to Flare No. 23.	18.82
SRU-545	F-545-H2S	10/29/2003	SRU 545 200 Train developed a leak in an H2S nozzle to the Clause reactor. Please note that this event was initially reported to TCEQ together with a separate event at HCU-942.	0.90
SRU-543/4	E-02-SCOT E-05-FLARE	10/29/2003 through 10/30/2003	Brief emergency flaring (approx. 10 minutes) resulted from an unexpected trip of SRU-544 400 Train.	5.10

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
HCU-942	E-23-FLARE F-942	10/29/2003 through 10/30/2003	Recycle Hydrogen Compressor at HCU 942 unexpectedly shut down. Recycle gas was routed to Flare No. 23 (FIN: F-23-Flare & EPN: F-23-Flare). In addition, HCU 942 (FIN = HCU-942) began shut down procedures by depressuring to Flare No. 23.	18.82
SRU-545	E-05-FLARE	11/6/2003	Unexpected high pressure in acid gas line caused 100 Train of SRU-545 to trip on high burner pressure.	0.92
SRU-545	E-03-SCOT	11/15/2003	Scot III (544) amine titration got above 56 (48 normal). T-9003 (amine stripper) level too low.	8.25
FCC-1241; SGRU-1242	F-22-FLARE; F-103-Flare	11/23/2003 through 11/24/2003	The wet gas compressor at FCC-1241 experienced an unexpected malfunction which prevented its normal operation and necessitated emergency flaring.	20.37
BH-15	F-BH-15	12/4/2003	#89 fuel gas drum at 15 bh unexpectedly released to the atmosphere at PSV 89 from 2:35 pm to 3:00 pm Expected cause is the loss of C-2A H2 booster compressor at 1344. Release was intermittent (combined duration of approximately 4 minutes).	0.42
AVU-146	F-19-FLARE F-103-FLARE	12/5/2003	Unexpected feed difficulties resulted in unavoidable flaring at SGRU -1242.	3.50
DCU-843	E-23-FLARE	12/8/2003	K6300 dump valve unexpectedly opened while shooting charge pump suction with 650# steam. Valve position records show intermittent flaring for this time.	0.45
SRU-545	E-05-FLARE E-02-SCOT E-03-SCOT	12/15/2003	100 Train at SRU 545 tripped due to loss of power to the burner control panel. This caused flaring at #5 Flare as well. The Flare did not smoke.	4.25
HCU-942	F-942	12/20/2003	A weld failure on a 6" recycle hydrogen line at HCU 942 resulted in emissions vented to the atmosphere.	15.00
T-2156	F-SRTF-BUT	12/23/2003	Maintenance personnel opened manway of TK 2156 after tank has been degassed and steamed. Butane vapors escaped from the open manway to the atmosphere.	1.27
HFAU-443	F-443	12/29/2003 through 1/1/2004	Light ends from 1242 resulted in minor intermittent flaring from 6341. Times are as follows: 12/29/03 11:55am -12:25 pm; 12:55 - 1:20 pm; 2:10 pm - 2:50 pm; 1/1/04 5:30 - 6:00 am; 8:50am - 10:05 am. Light ends are suspected from 1242. The unit is adjusting to revised operations while other refinery process units are undergoing planned turnaround activities.	70.17
AVU-146	F-19-FLARE	1/5/2004	The molecular weight of the gas feeding K2300B compressor decreased causing the compressor to not be able to maintain suction pressure.	0.63
AVU-146	F-19-FLARE	1/6/2004	P102 B Desalted Crude Charge pump tripped off resulting in the loss of flow to K2300B wet gas compressor. Wet gas was then routed to flare 19 from D-103.	0.38
SRU-543/4	E-05-FLARE	1/6/2004	High Line pressure resulted in flaring of acid gas.	0.23
LHSU 6341	F-443	1/6/2004	High pressure at Tower 6341 caused safety relief valves to lift resulting in emissions to the atmosphere.	0.17
AVU-146	F-19-FLARE	1/7/2004	Vacuum tower bottoms pump tripped resulting in flaring of vacuum off-gas.	3.50

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
SRU-543/4	E-05-FLARE	1/8/2004	High acid gas line pressure resulted in flaring of acid gas at flare 5.	0.08
SRU-543/4	E-01-SCOT	1/18/2004	The incinerator, F-101, went out of compliance due to hydrocarbons being charged thru the SWS 8746 then on into the sulfur units.	4.27
SRU-545	E-05-FLARE	1/21/2004	200 Train tripped off line due to a bad fire eye.	0.25
SRU-543/4	E-05-FLARE	1/25/2004	SRU-544 An unexpected 1-alarm fire created a temporary interruption of communications between the burner panel and its PLC, resulting in a partial loss of the unit (500 Train).	0.65
FCC-1241	E-02-1241	2/3/2004 through 2/5/2004	Unexpected maintenance to clean and repair precipitator cells.	48.00
DCU-843	E-23-FLARE	2/12/2004	DCU-843 shut down due to plugged charge pump strainer.	1.50
FCC-1241	F-22-FLARE	2/15/2004	LT feed on charge to FCCU 1241 tripped stm reboiler to depropanizer (high pressure) resulting in flaring of P-P.	3.67
FCC-1241	E-01-ESP	2/17/2004 through 2/18/2004	Unexpected maintenance to repair broken wires	28.50
DCU-843	E-23-FLARE	2/17/2004	DCU-843 experienced an unexpected excess emissions event due to control issues with the debutanizer overhead equipment. Determined to be non-reportable.	0.08
FCC-1241	E-01-ESP	2/20/2004 through 2/22/2004	The precipitator cell needs to be opened in order to take measurements of the wires housed within. The measurements are necessary to be able to correctly order the 2,700 replacements. At the same time, any broken wires will be cut out.	36.00
BH-15	F-BH-15	2/21/2004 through 2/27/2004	Planned, temporary shutdown of 42 Boiler to conduct planned maintenance. During this time a fraction of the emissions from 1 Gas Turbine Generator (1GTG) will be directed to the atmosphere. These emissions are normally routed through 42 Boiler and/or 43 Boiler. 1GTG will itself be shutdown for maintenance. Total duration of estimated potential excess emissions is 144 hours.	144.00
CRU-1344	F-18-FLARE	2/24/2004	Please note that this emissions event has been determined to be non-reportable after refined engineering analysis. A mechanical failure inside V-1 reactor at CRU 1344 requires an immediate shutdown of the process unit.	0.33
FCC-1241	E-01-ESP	2/28/2004 through 3/13/2004	Maintenance is being conducted to clean and repair the precipitators. All of the 2,700 wires will be removed and replaced. Work will include internal repairs.	336.00
CO9 Boiler	CO9 Boiler Bypass Stack	4/1/2004 through 4/28/2005	Faulty seal gaskets on the bypass butterfly valve caused PM emissions to vent from CO9Boiler Bypass Stack.	

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
FCC-1241	F-22-FLARE	4/1/2004	Flare butterfly opened due to loss of signal to the Wet Gas	0.53
AVU-146	E-01-146	4/13/2004 through 4/14/2004	A fire developed in AVU 146 H-101 Atmos Htr due to a tube leak within the fire box. Some crude oil emerged from the tube into the firebox, causing a small fire and began smoldering. The fire was out by 3:15pm on 4-14-04 per Refinery Fire Department per	17.45
SRU-543/4; SGRU-1242	E-05-FLARE E-02-SCOT; F-103-FLARE	4/14/2004 through 4/15/2004	Unexpected difficulties with SRU-544 SCOT II occurred due to abrupt changes made to accommodate the shutdown of AVU-146.	22.67
WWTU-8742	E-01-T01	4/14/2004 through 4/15/2004	WWTU 8742- RTO went down @ approximately 7:39 pm due to burner failure on the RTO. RTO re-lit at 02:40	7.83
DCU-843	E-23-FLARE	4/16/2004 through 4/19/2004	BB normally maintained within the process equipment necessitated flaring due to the unexpected shutdown of AVU-146.	65.00
LHSU 6341	F-15-FLARE F-443	4/18/2004	Light feed introduced into LHSU 6341 caused the flare regulator to open to 15 Flare and a safety relief valve to open to the atmosphere.	0.58
FCC-1241	E-01-ESP	4/20/2004	Precipitators will be by-passed for 4 hours in order for electricians to change to power source to a temporary hookup. This is being done to facilitate the ground work for the wet-gas scrubber.	4.00
HFAU-443	F-13-FLARE	4/26/2004	An excessive amount of butane product was sent from SGRU 1242 to MRU 1242 as a result of losing the water wash pumps. The excessive flow overloaded the outlet piping system for T-114 Absorber Tower at MRU 7542 causing PSV-18 to pop to Flare No 13 to protect T-114 from overpressure.	0.32
CRU-1344	F15FLARE	5/2/2004	The depropanizer located at 1344 had unexpected operational issues which resulted in a high pressure condition and subsequent flaring from 6341.	1.33
FCCU	FCCU	5/5/2004 through 12/27/2004	6-minute opacity readings >31% as follows: May - 634 periods; June 576 periods; July - 835 periods; August 1046 periods; September 1280 periods; October - 1400 periods; November - 1741 periods; December - 1364 periods. Total - 8,876 periods.	
SRTF	F17FLARE	5/5/2004 through 5/6/2004	Unexpected flaring of product butane from single butane compressor at 138 PS due to issues with safety and/or control valve for compressor operation. 3 flaring events recorded: 5/5 9:24 pm - 10:15 pm; 5/5 10:50 pm - 5/6 5:00 am; 5/6 6:05 am - 7:30 am.	10.10
HFAU-443	F15FLARE	5/23/2004	Upset at 1242 SGRU caused light ends (propane) to get to 6341 De-isobutanizer. The tower (6341) was slumped (heat removed) on the earlier shift due to high pressure. During start-up (added heat) 6341 was vented to #15 flare from 7:30am to 7:55am and again from 8:05am to 8:20am.	0.83

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
FCC-1241	F-22-FLARE	5/30/2004 through 5/31/2004	Tray 20 on the Amine Contactor was plugged.	31.00
FCC-1241	E-01-ESP	6/7/2004 through 6/12/2004	The wet gas scrubber project requires a cutover of power to the ESP. The power to A & C cells will have to be cutoff and some electrical lines will have to be moved and power relocated. These lines must be moved to complete construction of the scrubber.	120.00
SRU-543/4	E-01-SCOT	6/8/2004	Erratic control of V-303 Stripper Tower.	3.38
AVU-146	F-19-FLARE	6/10/2004	AVU-146 Flaring Vacuum Tower Overhead. P-123B Primary Vacuum Bottoms Pump Turbine tripped due to a reduced available liquid volume of Vacuum Tower Bottoms in T-108 Tower Boot. This caused the pump to lose required suction pressure. This loss of suction pressure unloaded the steam driver and resulted in the turbine over-speed trip engaging as designed to prevent turbine damage.	0.43
FGMD	F15FLARE F-BH-15	6/14/2004	K-1900 Absorber Gas compressor was down at 1241 FCC for seal work.. The PSA unit went down at Air Products and the refinery fuel system strainer needed to be cleaned at SMR. The refinery fuel system over pressured and the fuel knockout drum safety lifted at 15BH (14:15 to 14:17). 15BH also flared their fuel gas knockout drum to #15 flare intermittently from 13:10 to 15:42.	2.53
ALKY	F-13-FLARE	6/17/2004	Excess amount of propane in the charge for the available cooling capacity.	6.25
DCU-843	E-23-FLARE	6/20/2004	Lightning strike shut down the Wet Gas Compressor.	0.27
FGMD	F15FLARE	6/21/2004	The Refinery Fuel Gas System pressured up during the heat of the day, the safety on DR-89 lifted for approximately 1 minute, and the flare regulator opened up to @ 15 Flare from 10:40 am to 12:45 pm. (BTU Value = 1107, H2S = 30 ppm's)	2.08
HFAU-443	F-244CT	6/22/2004 through 6/23/2004	E-16 isobutane cooler developed as slight leak. Discovery made at 6 am.	31.20
HCU-942	E-05-FLARE E-23-FLARE E-01-SCOT E-02-SCOT E-03-SCOT	6/24/2004 through 6/25/2004	Sour water and hydrocarbons from the cold high-pressure separator were unexpectedly sent to the product stripper at HCU-942 creating an upset on the amine contactor and stripper resulting in an increase in flow to SRU-545. 200 Train at 545 tripped on high	9.00
HCU-942	F-432CT	6/25/2004	Cooling tower sampling detected a slight leak. Further testing revealed this to be C6600.	5.57
HFAU-443	F15FLARE	6/28/2004	6341 De-isobutanizer was shutdown on day shift and back in start-up mode at 3:30pm. The light ends were flared off during start-up.	1.50
unknown	F15FLARE	6/30/2004	Visible Emissions were observed at 15 Flare. The source of the hydrocarbons is possibly either VOCs weathering off the knock-out drum or a valve in the flare header not holding.	0.22

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
HFAU-443	F15FLARE	6/30/2004 through 7/1/2004	6341 De-isobutanizer intermittently flaring propane from the overhead accumulator (V-3). The de-isobutanizer received a high concentration of propane from GRU-1242 earlier in the shift due to an upset at their site.	8.50
HCU-942	E-23-FLARE	7/10/2004 through 7/11/2004	Cut the Light Naphtha from D-1310 Fractionator Reflux Drum, and D-1260 Product Stripper Reflux Drum (38.3 B/H) to the Flare Drum and pumping the Naphtha to slop. Flaring off Naphtha, and flaring T-1510 Amine Contactor Overhead Gas (6.1 mmscf/d of sweet gas). This is due to SGRU-1242 shutting down for maintenance activities.	13.92
SCOT III	E-03-SCOT	7/14/2004 through 7/15/2004	Scot 3 stripper tower upset. Cooler on T-9002 scrubber running hot. Rolling average on CEMS spiked from 8:20pm to 8:24pm; 8:24pm to 8:52pm; 10:10pm to 11:26pm ; and from 11:50pm to 2:35am.	8.30
DCU-843	F-432CT	7/21/2004 through 7/27/2004	C-6600 C3/C4 splitter overhead condensers were found to be leaking.	144.82
HCU-942	E-23-FLARE	8/20/2004	Hydrocracking Unit 942 flared recycle hydrogen due to a high reactor bed temperature.	1.12
SCOT II	E-02-SCOT	8/26/2004	Adding fresh amine to SCOT II resulted in the amine cooling the tower causing the titration to go high. This resulted in SO2 in the SCOT incinerator stack to exceed the permitted allowables.	8.58
ALKY	F-13-FLARE	9/10/2004 through 9/11/2004	Leaking valve on E-20 Depropanizer OH Cooler resulted in the need to make repairs which required a reduction in charge to the Alky which resulted in the need to go to the flare.	24.00
SRU-545	E-03-SCOT	9/16/2004 through 9/17/2004	SRU-545: H-9002 Incinerator went out of compliance on SO2 & NO2 due to 200 Train air demand malfunction causing the SO2 break-through.	6.45
SRU-545	E-03-SCOT	10/8/2004	An FSC Trip on the high pressure boiler at 100 train caused the Claus unit to shut down. The start up of the 100 train resulted in intermittent visible emissions and SO2 concentrations greater than authorized at the tail gas incinerator.	5.75
HFAU-443	F-443 F-13-FLARE	10/13/2004 through 10/19/2004	HFAU-443: Leak discovered in a nozzle on T-6 Depropanizer Tower. (Leaking Propane, Butane, and HF Acid).	136.25
WWTU-8742	F-8742	10/17/2004 through 11/4/2004	Maintenance Emissions from Annual RTO TA.	430.22
SRU-545	E-03-SCOT	11/4/2004 through 11/5/2004	9003 incinerator in & out of compliance. Maint's worked ratio analyzer which was giving the unit problems. During the night shift operators added condensate to the amine to lower titration to help bring unit back in compliance.	15.72
SRU-545	E-03-SCOT	11/7/2004	Loss of C-9003 fin fan on T-9002 Absorber .	3.95

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
GFU-244	F-233PS	11/8/2004	A potential leak was discovered at M-302 fuel gas exchanger.	22.17
SRU-545	E-03-SCOT	11/8/2004 through 11/9/2004	H-9002 incinerator stack out of compliance on SO2 rolling average due to the lost of C-9002A1 fin fan.	9.15
HCU-942	E-23-FLARE	11/14/2004	SRV on D-1240 (cold low pressure separator) lifted prematurely.	0.37
HFAU-443	F-443	11/26/2004	Got light ends to 6341 De-isobutanizer. The tower pressured up and the safety popped at @128#.	0.82
DCU-843	E-23-FLARE	12/9/2004	Wet Gas Compressor tripped off line due to issues with the anti-surge valve.	11.77
DCU-843	E-23-FLARE	12/15/2004	A temporary electrical issue resulted in flaring of wet gas from DCU-843.	1.85
SCOT III	E-03-SCOT	12/25/2004	Low air flow indication to the incinerator caused the FSC to trip the Incinerator off line.	3.93
DCU-843 COOLING TWR	E-23-FLARE; F-432CT	12/30/2004	Operators bypassed C-6500 A/B Debutanizer overhead condensers due suspected leak. The condensers were flared via a one half inch line going to #23 flare.	4.50
Refinery	Refinery	1/6/2005	Intermittent flaring during unit shutdowns as part of a planned major turnaround. AVU-146 (EPN F-19-FLARE); sru 545 (epn e-03-SCOT), SGRU-1242 (EPNF-103-FLARE), AVU-146 (EPN F-19-FLARE), DCU-843 (EPN E-23-FLARE), SRU-543/4 (EPN E-02-SCOT).	
SRU-543/4	E-02-SCOT	1/7/2005	604 J lean amine pump shutdown causing excess SO2 at SCOT II.	3.25
FCC-1241	F-22-FLARE	1/17/2005	High liquid level in the wet gas suction drum caused the K-1300 wet gas compressor to shut down.	0.95
BH-15	E-02-BH15 E-03-BH15	1/20/2005 through 2/21/2005	Planned maintenance of Gas Turbine #1 at 15 Boiler house in conjunction with refinery-wide turnaround.	432
SCOT III; DCU-843; SGRU-1242	E-03-SCOT; E-23-FLARE; F-103-FLARE	2/4/2005 through 2/9/2005	Planned startup after planned major turnaround.	
SRU-543/4	E-01-SCOT	2/8/2005	Took large shot of hydrocarbons generated by SGRU-1242 during their unit start up. Their operator called and warned of the hydrocarbons but the affect still over powered the incinerator. Incinerator flamed out, temperature dropped below 1200° and the SO2 went above 250 ppm's.	1.32
SRU-543/4; SGRU-1242	E-02-SCOT; F-15-FLARE; F-1242	2/8/2005 through 2/11/2005	Took large shot of hydrocarbons generated by SGRU-1242 during their unit start up. Their operator called and warned of the hydrocarbons but the effect still over powered the incinerator. Incinerator flamed out, temperature dropped below 1200° and the SO2 content went above 250 ppm.	65.48

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
Refinery	FOP-O-02229	2/11/2005 through 6/16/2005	It was reported that between February 11, 2005 and June 16, 2005, there was 1,460 instances where the H2S content exceeded 100 ppm during sulfur loading operations.	
SGRU-1242	E-06-BH16 E-07-BH16	2/12/2005 through 2/13/2005	1242'S Gas foing to refinery fuel was off-spec on H2S and the fuel gas mix drum went above allowed limit on H2S. 243 GFU recycle gas high in H2S also. FGMD high on H2S from 6:15AM toO 7:15AM and 3:45PM to 3:18AM. Went high again at 8AM.	28.75
FCC-1241	F-22-FLARE	2/13/2005	K-1900 Absorber Gas Compressor tripped off line. Pressure built up on the 2nd Stage of the Wet Gas Compressor causing SRV 102 to lift to the Flare.	0.30
HFAU-443	F-13-FLARE	2/16/2005 through 3/30/2005	Intermittent flaring during unit shutdown as part of major planned turnaround. This includes the emissions from LHSU-6341 & MRU-7542.	
FGMD	F15FLARE	2/16/2005	Refinery Fuel Gas system is loaded due to loss of the Absorber Gas Compressor at 1241. All of the Absorber Gas production is going into the RFG system which over loaded the system. Flared RFG when the pressure exceeded the Flare Regulator set point.	9.77
FCC-1241; SRU-543/5; GFU-244; E-03-SCOT	E-01-ESP F-22-FLARE; E-01-SCOT; F-02-FLARE; E-03-SCOT	2/21/2005	These units were shutdown for a planned major turnaround.	
E-03-SCOT	E-03-SCOT	3/1/2005	Unit exceeded the 250 ppm SO2 emission limit	6.85
E-03-SCOT	E-03-SCOT	3/4/2005	Unit exceeded the 250 ppm SO2 emission limit	6.00
SRU-545	E-03-SCOT	3/8/2005 through 3/9/2005	A change in the characteristics of the feed to SRU-545 resulted in high concentrations of SO2 at the Tail Gas Incinerator.	18.83
DCU-843	F15FLARE	3/12/2005	Vent valves were inadvertently left opened when placing the P-P Skid in service resulting in flaring.	9.50
FCC-1241	F-22-FLARE	3/21/2005 through 4/2/2005	Startup of FCCU-1241 after a planned unit turnaround. The new Wet Gas Scrubber was also put into service.	282.00
FCC-1241	F-22-FLARE	3/27/2005 through 3/28/2005	Line split on cold feed inlet to unit. Charge forcibly reduced to accommodate resulting spill. Wet gas flared due to low flow to wet gas compressor.	28.00
Refinery	Refinery	4/1/2005 through 4/2/2005	During scheduled start-up emissions exceeded those submitted in the start-up notification report.	

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
FCC-1241	F-22-FLARE	4/11/2005	Premature lifting of SRV resulted in flaring of sour PP from depropanizer reflux drum at FCCU-1241.	4.75
HFAU-443	F-13-FLARE	4/19/2005 through 4/20/2005	LHSU-6341 will be shutdown temporarily for LDAR repairs.	24.00
HFAU-443	F-13-FLARE	5/4/2005	LDAR VOC valve maintenance required shutting down of the 9A Isodryer.	3.17
HFAU-443	F-443 T-2401	5/6/2005	On 5/06/2005, at approximately 5:40 AM, operations noticed an odor near the control room of the Gulfiner Complex. The operators from the Gulfiner Complex noted the wind direction (easterly) and determined the possibility of hydrocarbon	5.87
SRU-545	E-02-SCOT E-03-SCOT E-23-FLARE	5/10/2005	SRU 545 - sponge oil was inadvertently pumped to SWS-8747 along with the sour water. These hydrocarbons partially vaporized and passed overhead into the Claus Units Trains 100 and 200 of SRU-545. The emergency shutdown of these units resulting in flaring and abnormal incinerator emissions.	5.37
AVU-146	F-19-FLARE	5/13/2005 through 5/20/2005	Flaring occurred due to a suspected trip of the C102 Vacuum Tower Offgas compressor.	180.67
HCU-942	E-23-FLARE	6/1/2005	PSV-292 on cold low pressure separator opened prematurely at 642 psig. The set point for this PSV is 715 psig. The cause for premature opening of PSV is under investigation and will be provided upon final notification.	0.33
FCC-1241	E-01-WGS	6/11/2005 through 6/13/2005	Sequence of Events: On Saturday, June 11, 2005, at approximately 7:05 PM, FCCU-1241 experienced an unexpected unit upset. DCS Board operations personnel received numerous process alarms indicating that K-1000B Air Blower had tripped and lost flow.	41.72
AVU-146; SGRU-1242	F-19-FLARE; F-103-FLARE	7/3/2005	Sequence of Events On Sunday, July 3, 2005 at approximately 8:53 a.m., the Crude Complex experienced an unexpected upset. Operators received a TDC 3000 alarm, alerting them that the K-2300B Wet Gas Compressor PLC shutdown had occurred at SGRU-1242.	0.82
WWTU-8742	E-01-T01	7/5/2005	Sequence of Events: On Tuesday, July 5, 2005, the RTO was planned to shut down due to a leaking hydraulic oil line. Maintenance and Operations met that morning to determine a course of action.	9.20
SRU-545	E-03-SCOT	7/7/2005	C-9002 Lean Amine fin fan shut down for maintenance work.	6.00
SRTF	F17FLARE	7/14/2005 through 8/9/2005	High pressure on M-1 Drum caused the flare regulator to open to Flare 03. Taking receipt of Iso-butane from Fanette which has propane in the mixture. Trucks hauling the isobutane to Fanette were found to be contaminated with Propane.	639.08
Refinery	FOP-O-02229	7/16/2005 through 1/15/2006	It was reported that from July 16, 2005 through January 15, 2006, there was 87 instances where the H2S content exceeded 100 ppm during sulfur loading.	

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
DCU-843	E-23-FLARE	7/22/2005	On Friday, July 22, 2005, HCU-942/SRU-545/DCU-843 Complex experienced an operational upset. The complex had suffered an interruption of UPS power in the control room at approximately 2:45 p.m. This resulted in the loss of the DCS.	1.45
HCU-942	F-432CT	7/27/2005 through 8/1/2005	Sequence of Events: On Wednesday 07/27/05, a third party emissions monitor, EFSI, was performing routine bi-monthly monitoring of CTU-432 when they detected VOC emissions at 11:43 AM.	121.15
SRTF	E-03-FLARE	7/27/2005 through 7/29/2005	Maintenance removed the flare regulator on M-1 Accumulator. The regulator was air tested at 130 psig and water tested on the back end to ensure it was bubble tight.	55.00
SRU-543/4	E-05-FLARE	8/9/2005	Sequence of Events: On Tuesday, August 9, 2005, at approximately 4:50 PM, SRU-543 shut down when an infrared temperature signal from Thermal Reactor D-204 malfunctioned.	1.07
CRU-1344	F-18-FLARE; F-360-PS	8/15/2005 through 8/19/2005	E-36 Exchanger at CRU-1344 developed a potential leak. The leak resulted in emissions through Cooling Tower 360.	96.17
BH-15	E-04-BH16	8/21/2005 through 9/8/2005	Planned maintenance will occur involving addition of the PACE steam supply line to 15BH. During this time the potential exists for a fraction of the emissions from 1 Gas Turbine Generator (1GTG) will be directed to the atmosphere intermittently. These emissions are normally routed through 42 Boiler and/or 43 Boiler.	432.00
FCC-1241	E-01-WGS	9/6/2005	A combination of the low bed temperature (1240-1250 degF) in the Regenerator and an imperfect air distribution (high excess O2 concentrations in the flue gas) are believed to have caused incomplete combustion. The incomplete combustion caused the CO concentration exiting the Wet Gas Scrubber to increase beyond permit limits.	7.00
SRTF	E-03-FLARE	9/17/2005	Propane/Propylene (PP) mix flared due to instrumentation issues with PIC-2134.	5.67
DCU-843	F-843	9/19/2005	A suspected electrical fire occurred on one of the coke drums.	1.00
SGRU-1242	F-103FLARE	9/22/2005 through 9/23/2005	The entire refinery was shut down as a precautionary measure for the passing of Hurricane Rita. These emissions are a direct result of the shutdown process.	21.00
Refinery	Refinery	9/22/2005 through 10/28/2005	The following are all the FINS included in this report: FCC-1241, FLARE-22, AVU-146, FLARE-19, SGRU-1242, FLARE-103, CRU-1344, FLARE-18, HFAU-443, FLARE-13, DCU-843, HCU-942, FLARE-23, HTU-245, FLARE-20, SCOT-I, SCOT-II, SCOT-III, WWTU-8742. The entire refinery was shutdown as a precautionary measure for the passing of Hurricane Rita. The emissions in this report are a result of the post-hurricane Startup.	858.00
CRU-1344	F-18-FLARE	9/28/2005 through 9/29/2005	Repair of E-36 A/B required purging of a small volume of vapors to the atmosphere. This event took place as follows: 9/28/2005 13:35-14:00 and 9/29/2005 08:00-08:05.	18.50

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
DCU-843	T-8432	9/30/2005 through 10/30/2005	Nitrogen release at roof of coker charge tanks T-108 and 109. Slight plume noted by TCEQ (Chris Mayben - Region 8) during drive by observations.	720.00
WWTU-8742	F-WWTU-8742	10/10/2005 through 10/14/2005	This is the result of a unit startup after the entire refinery was shutdown in preparation for Hurricane Rita.	88.00
SRTF	F17FLARE	10/14/2005 through 10/21/2005	High pressure on M-1 HPA for J-23 Compressor. Flare regulator open about 3%.	169.83
SGRU-1242	F-103FLARE	10/24/2005	On October the 24th, 2005 at approximately 12:47 AM, SGRU-1242s Wet Gas Compressor lost the capacity to compress wet gas into the Absorber Tower System. The Wet Gas Compressor went into a surge condition.	0.47
SRU-543/4 SRU-545	E-02-SCOT E-03-SCOT	10/28/2005	On Friday, October 28, 2005, SRU-545 Unit experienced an environmental release. The Incinerator emissions were above the limits from approximately 8:45 a.m. to 2:45 p.m. The Incinerator also had two visible emission periods.	14.40
SRU-545	E-03-SCOT	11/2/2005 through 11/5/2005	The emissions for this upset did not reach any Reportable Quantity (RQ), until approximately 10:56 PM on Thursday, November 3, 2005. On November 2, the amine system was being cooled by C-9002A/B Lean Amine Cooler.	73.05
BH-15	F-BH-15	11/2/2005	A wire was accidentally knocked loose from the natural gas controller in 16 BH Control Room. This caused the regulator to go wide open to the refinery fuel gas system. This caused the refinery fuel system to pressure up. The high pressure opened the flare line to 15 flare and lifted PSV-081-15BH on DR-89 Drum to the atmosphere.	0.20
SRU-545	E-02-SCOT E-03-SCOT E-05-FLARE	11/9/2005 through 11/10/2005	On Wednesday, November 9, 2005, SRU-544s SCOT II & 545's SCOT III Units incinerators experienced higher than normal SO2 emissions. The Incinerator emissions were above the SO2 limits for several hours. Also, Flare 05 was utilized.	16.53
SRU-543	E-01-SCOT	11/13/2005 through 11/18/2005	A new sulfur Claus unit, 300 train, was brought into service at the existing Sulfur Recovery Unit, SRU-543. Startup was completed safely.	120.00
WWTU-8742	F-WWTU-8742	11/16/2005 through 11/19/2005	On Wednesday, 11/16/05, the Regenerative Thermal Oxidizer (RTO) at the Wastewater Treating Unit 8742 (WWTU) tripped off at 11:24 PM. Notification was given to the operators through the first-out alert.	63.38
FCC-1241	E-01-WGS	11/17/2005 through 11/18/2005	On Thursday, November 17, 2005, at approximately 5:28 PM, FCCU-1241 experienced an unexpected unit upset. The DCS Board operator received a blower trip alarm. The alarm indicated that K-1000B Air Blower had tripped off.	18.00

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
SCOT I, SCOT II, SCOT III, SRU 454, SRU 544, SRU 543	E-23-FLARE E-01-BH15 E-03-BH15 E-01-SCOT E-02-SCOT E-05-FLARE E-03-SCOT	11/19/2005 through 11/20/2005	On Saturday, November 19, the refinery experienced an environmental upset. At approximately 10:20 AM both of the sulfur trains at SRU-545 tripped. Several restart attempts for both trains were unsuccessful.	36.77
DCU-843	E-23-FLARE	11/21/2005	On Monday November 21, DCU 843 experienced an operational upset resulting in flaring of sour liquid petroleum gas product from T-6500 Debutanizer Overhead Drum.	0.33
HCU-942	E-23-FLARE	11/22/2005 through 11/27/2005	On Tuesday November 22, HCU-942 experienced an operational upset resulting in flaring of the light naphtha product. The unit was increasing charge rate and reactor temperatures after being reduced due to the 11/19/05 upset.	130.87
WWTU-8742	F-WWTU-8742	11/27/2005 through 12/8/2005 12/09/2005	The RTO was shut down for an annual routine preventative maintenance turnaround. The planned maintenance was completed safely in a timely manner.	277.35
DCU-843	E-23-FLARE	11/29/2005	On Tuesday, November 29, 2005, DCU-843 experienced an unexpected operational upset resulting in an unscheduled unit shutdown. The unit was operating normally at approximately 100,000 B/D charge rate.	12.13
CRU-1344	F-366CT	11/30/2005 through 12/5/2005	It was determined that the potential unauthorized emissions from this event never reached or exceeded a Reportable Quantity (RQ) as defined by 30 TAC 101.1.84. Higher than normal VOC emissions were detected on 11/30/05 at Cooling Tower 360.	120.88
HFAU-443	F-13-FLARE	12/3/2005 through 12/4/2005	A pinhole leak was discovered in a weld on E-300C. 6341 was shutdown in order for proper repairs to be made.	24.00
Refinery	Refinery	12/9/2005	An incorrect solenoid valve replacement caused emissions in excess of the established limits in the ECIELT which was a violation of the permit 6825A and PSD-TX-49.	
SRU-545	E-03-SCOT	12/18/2005 through 12/19/2005	200 Train was put on heat soak at 21:00. The lubrimist fitting on the outboard bearing for K-1001B combustion blower broke off. The blower slowed down and the air to 200 Train cut back. 200 Train tripped off and caused the SO2 to go out of compliance at the SCOT III Incinerator stack.	7.05
SRTF	F17FLARE	12/19/2005	High pressure on M-3 HPA for J-24 compressor caused the flare regulator to open about 3% in order to vent the iso/pp mix.	4.75
SRU-543/4	E-01-SCOT	12/21/2005	300 Train tripped due to a boiler feed water swing at 18 BH. The emissions are a result of an air purge to 300 Train during the startup of 300 Train.	6.57
HFAU-443	F-13-FLARE	12/21/2005	Startup of 6341 after shutdown for repairs.	4.50

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
HFAU-443	F-443	12/21/2005	A gasket leak was discovered at LHSU-6341. Approximately 150 ft. of 4" line was depressured to the flare so maintenance could repair the gasket.	0.75
HFAU-443	F-244CT	12/22/2005 through 12/23/2005	On 12/14/2005, unit operations personnel noted that the cooling water pH was below normal operating limits. The Cooling Water Chemical Vendor made recommendations to suspend chlorine injection and monitor/log caustic addition.	27.88
HFAU-443	F-244CT	1/9/2006 through 1/10/2006	Upon further evaluation, it was determined that the emissions from this event never reached or exceeded any RQ as defined by 30 TAC 101.1(89). Higher than normal VOC concentrations were detected by a third party monitoring group during routine monitoring	26.13
HFAU-443	F-13-FLARE	1/19/2006 through 1/24/2006	PSV-123, the safety valve on the shell of C-27 was found to be leaking to the flare. The leak was discovered at approximately 13:30 on 01/24/06. It is estimated to have been leaking ~ 2 gpm for 6 days.	120.00
SRTF	F17FLARE	1/21/2006	J-24 Compressor was unable to compress light ends in IC4 received in 2156 TK. The light ends are suspected to be PP left in the truck from previous load(s). VOC represents "other" and does not have authorization at this EPN.	3.00
HFAU-443	F-13-FLARE	1/24/2006 through 1/25/2006	Operations found PSV-123, the safety valve on the shell of C-27, leaking to the flare. Operations isolated and depressured the entire NC4 deflourinator system because there aren't any valves to just isolate the PSV.	24.00
SRU-545	E-03-SCOT	1/27/2006 through 1/28/06	Air demands to 100 & 200 Trains had to be put into manual mode because the degassing control instrumentation was taken out of service in order to repair the Air Demand analyzer for 200 train. With the air controls in manual, it is more difficult for operations to control the combustion air flow. This resulted in higher than normal SO2 concentrations leaving the incinerator stack.	14.38
SGRU-1242	F-103FLARE	2/1/2006	This incident was originally report to TCEQ. Upon further investigation, it was determined that the emissions did not meet or exceed any RQs set by 30 TAC 101.1.(89).	1.17
SRTF	F17FLARE	2/2/2006	138 PH vented PP/Iso mix to the flare at CPC. The compressor was unable to compress light ends believed to be PP left over from the Iso trucks "back hauling." VOC represents "other" and does not have authorization at this EPN.	4.00
CRU-1344	F-18-FLARE	2/3/2006 through 2/4/2006	CRU-1344 started up the Debutanizer system after being shutdown for a while. The emissions were a result of lining out the tower. VOC represents "other" and does not have authorization at this EPN.	23.42
HFAU-443	E-01-443	2/10/2006 through 4/7/2006	Premcor received the results of a stack test (performed on 02/10/06) at the Alky heater (E-01-443) which showed HF emissions above the Flexible Permit (6825A) maximum allowable emission rate. Retesting of the heater on 4/1/06 indicated HF emissions continued to be higher than normal.	1349.45

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
FCC-1241	F-22-FLARE	2/12/2006 through 2/14/2006	Maintenance bled down a ling to pull a blank after work on E-1475B Stripper Reboiler. VOC represents "other" as described in 30 TAC 101.201.	38.75
SRTF	F17FLARE	2/12/2006	138 PH vented PP/Iso mix to the flare at CPC. The compressor was unable to compress light ends believed to be PP left over from the Iso trucks "back hauling." VOC represents "other" as described in 30 TAC 101.201.	4.00
DCU-843	E-23-FLARE	2/13/2006	On Monday, February 13, 2006 at approximately 4:30 PM, DCU-843 Delayed Coking Unit experienced a trip of K-6300 Wet Gas Compressor.	1.85
DCU-843	E-23-FLARE	2/20/2006	On February 20, 2006, DCU-843 Unit experienced an unexpected upset on T-6500 Debutanizer Tower. The tower pressure increased rapidly and PSV-690 opened as designed to relieve excess pressure on the tower to Flare 23.	1.90
SRU-543/4, SRU-545, SCOT I, SCOT III	E-05-FLARE	2/21/2006	On February 21, 2006, the North Sulfur Complex experienced an operational upset. At approximately 05:58 PM the 400 Train tripped off line due to a high-high level in 401-F H2S Knock Out Drum that feeds H2S to the 400 Sulfur Train.	3.53
SRU-545, SRU-544, FGMD	E-03-SCOT	2/24/2006	On Friday, February 24, 2006, at approximately 8:10 AM, SRU-545 Sulfur Complex experienced an operational upset.	11.93
FCC-1241	F-22-FLARE	3/15/2006 through 3/16/2006	Maintenance depressured E-1475A, Stripper Reboiler to repair a leak. VOC represents "other" as described in 30 TAC 101.201.	23.25
FCC-1241	F-22-FLARE	3/20/2006 through 3/21/2006	Maintenance flared down/purged exchanger E-1475A to blank for maintenance to repair a leak.	27.67
SRU-543/4	E-01-SCOT	4/1/2006	Hydrocarbons in the Acid gas (unit charge) starved the units of air. This caused the SO2 concentrations to increase at F-101 & 402-B. F-101 was above 250 ppm SO2 from 03:30-03:55; 03:57-04:01; 04:13-04:17; & 08:41-08:43 (total duration = 1 hour, 7 minutes). 402-B was above 250 ppm SO2 from 03:13-03:20 & 03:28-03:34 (total duration = 15 minutes).	5.68
GFU-243	E-20-FLARE	4/17/2006 through 4/19/2006	GFU-243 was shutdown in order to replace the catalyst. These emissions are a result of the shutdown activity.	48.00
SGRU-1242	F-103FLARE	4/19/2006	On Wednesday, April 19, 2006, SGRU-1242, flared wet gas from approximately 1:41 pm to 2:45 pm. The SGRU was operating normally at the time of the unexpected flaring.	1.07
DCU-843	E-23-FLARE	5/1/2006	On Monday, May 1, 2006, at approximately 10:40 a.m., DCU-843 Delayed Coking Unit experienced an unexpected trip of K-6300 Wet Gas Compressor.	1.90

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
CRU-1344	F-18-FLARE	5/12/2006	Chloride salts routinely plug up the trays in the Depropanizer. These salts can be removed by "water-washing" the tower while it is in service. While water-washing the Depropanizer tower, propane got into the Debutanizer tower and caused the tower pressure to increase. The pressure increased until the Debutanizer Overhead was relieved (as designed) to the flare to prevent equipment damage. VOC represent "other" as described in 30 TAC 101.211.	2.18
HFAU-443	F-13-FLARE	5/20/2006 through 5/21/2006	E-6B Deflourinator and F-25 KOH Treater were taken out of service to replace spent catalyst (activated alumina) in the deflourinator. Operations used N2 to pressure the two vessels to a tank before de-pressuring to the flare. This is a conservative estimate assuming that the vessel was not pressured to the tank prior to the flare. VOC represents "other" as described in 30 TAC 101.211.	7.50
FCC-1241	E-01-WGS F-22-FLARE	5/30/2006	On 5/30/2006, FCCU-1241 experienced an unexpected unit upset. The unit was operating normally when the TP-1100 B Feed Pump tripped off at approximately 4:39 a.m. Initial attempts to restart the turbine driven feed pump were unsuccessful.	2.22
SRTF	F17FLARE	6/2/2006	J-24 Isobutane compressor was depressure to the flare for startup. VOC represents "other" as described in 30 TAC 101.211.	0.50
GFU-244	F-19-FLARE	6/7/2006 through 6/12/2006	GFU-244 was shutdown in order to change the catalyst. The majority of the emissions occurred while depressuring the unit in the first 72 hours.	131.00
HCU-942	E-23-FLARE	6/9/2006	Light ends entering the fractionator pressured up the tower and had to be relieved to the flare.	3.90
FCC-1241	E-01-WGS F-22-FLARE	6/18/2006 through 6/19/2006	On Sunday, June 18, 2006, FCCU-1241 experienced an unexpected unit upset. At approximately 10:55 a.m., Unit operations personnel received process alarms for high vibration on the turbine driver for K-1000B Air Blower.	15.08
SGRU-1242	F-19-FLARE F-103-FLARE	6/20/2006	On Tuesday, June 20, 2006, SGRU-1242 experienced an unexpected operational upset. K-2300 Wet Gas Compressor tripped off-line at approximately 4:10 p.m., resulting in an upset condition on the unit and flaring of Wet Gas.	0.83
SRTF	F17FLARE	6/22/2006 through 6/23/2006	138 PH took 2154 Tank out of service for an internal inspection. The sphere had to be evacuated in order for Maintenance to enter. VOC represents hexanes and heavier compounds.	25.50
HCU-942	E-23-FLARE	6/25/2006	HCU-942 temporarily experienced problems with the feed composition when they lost the LCGO & HCGO from the Coker (DCU-843). This resulted in a much lighter composition in the fractionator, which increased the tower pressure. The fractionator overhead stream was routed to the flare in order to help reduce the system pressure.	6.82
BH-15	F15FLARE F-BH-15	6/26/2006	On June 26, 2006, at approximately 5:29 AM, fuel gas was flared at Flare 15 due to an unexpected pressure increase in the Refinery Fuel Gas System. The Gas Dispatcher was alerted that the Absorber Gas Compressor had shut down.	5.47

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
FCC-1241	F-22-FLARE	6/29/2006	On Thursday, June 29, 2006, FCCU-1241 experienced an unexpected unit upset. At approximately 7:58 a.m., the reactor section system pressure began to increase.	0.87
HFAU-443	F-13-FLARE	7/5/2006	F-25 KOH treater was depressured to the flare for a dump & reload. VOC represents "other" as described in 30 TAC 101.211.	1.00
HFAU-443	F-13-FLARE	7/6/2006	The flow of butane was inadvertently restricted below the butane production rate for prolonged period at HFAU-443. The excess production was lined up to the Butane Side draw line from the T-5 Isostripper to the Butane Deflourination Section, which was blocked in at F-25 KOH Treater. F-25 was shutdown at the time for a catalyst turnaround. At the time of the restricted flow, there was also a steam leak in C-27R Preheater. A combination of these two activities resulted in a pressure increase. The pressure increase caused PSV-123 to open to the flare to relieve the pressure. The steam leak was not discovered until after the flaring began. VOC represents "other" as described in 30 TAC 101.201.	1.50
HFAU-443	F-13-FLARE	7/11/2006	F-25 KOH Treater was depressured to the flare to repair a plugged drain line on the vessel. VOC represents "other" as described in 30 TAC 101.211.	1.50
SRU-543/4	E-03-SCOT	7/21/2006	501-J Air Blower tripped offline at SRU-544 due to low air flow. This, consequently, tripped off 500 train and disrupted sulfur plant operations within the refinery. The trip resulted in higher than normal SO2 concentrations at 402-B Incinerator (5:53-6:06) & H-9002 Incinerator (5:39-9:47). Due to the shutdown of 500 Train, GFU-243 was put on circulation in order to reduce the acid gas make and increased the H2S concentrations in the North Side Refinery Fuel Gas system (6:00-6:15).	4.13
AVU-146	F-19-FLARE	7/21/2006	On Friday, July 27, 2006 at approximately 2:40 PM, both Vacuum Off-gas Compressors at AVU-146 tripped offline due to insufficient seal water supply. The compressors tripping caused the Vacuum Overhead system pressure to increase above design operating parameters. Vacuum Off-gas was relieved to Flare 19 as designed to reduce system pressure until the compressors could be restarted.	1.05
SRU-543/4	E-05-FLARE E-02-SCOT E-03-SCOT E-01-SCOT	7/27/2006 through 8/1/2006	On July 27, 2006, the North Sulfur Complex experienced an operational upset. At approximately 6:12 PM, SRU-544s 500 Claus Train tripped off due to the loss of 501-J Booster Air Blower. This increased the Acid Gas System pressure.	116.80
SRU-543/4	E-05-FLARE E-02-SCOT	8/1/2006 through 8/5/2006	Planned Startup of SRU-544 after SCOT-II was shutdown and 400 & 500 Claus trains put on heat soak so that the Rich-Lean Amine Exchanger could be inspected and repaired. SCOT II Recycle Gas was flared on 8/1/2006 16:54 for approximately 3 hours and 5 minutes.	81.00

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
FCC-1241	F-22-FLARE	8/7/2006 through 8/8/2006	Maintenance water washed the Regenerator Blower's turbine drivers to wash out anticipated salt build up that could be preventing the blowers from operating at optimum efficiency.	15.17
SRU-543/4	E-01-SCOT	8/16/2006	SCOT I Incinerator (F-101) experienced higher than normal SO2 concentrations. The increased concentrations were caused by a combination of a line pressure swing from the South SRU and hydrocarbons in the Acid Gas from an undetermined source. The SO2 concentration was above 250 ppm for a total of 71 minutes.	2.87
DCU-843	E-23-FLARE	9/6/2006 through 9/7/2006	On September 6, 2006, at approximately 3:46 PM, the pressure controller for K-6300 Wet Gas Compressor, PV-2806 Flare Valve, opened as designed, allowing wet gas flow to Flare 23.	9.43
SRU-546	E-03-SCOT	9/10/2006 through 9/14/2006	Operations started up the new SRU-546 & SCOT IV. The emissions in this report are a direct result of the startup procedure. SCOT IV stripper overhead gas was routed to the flare, via a pressure controller, for a total of approximately three minutes.	103.48
DCU-843	E-23-FLARE	9/10/2006	A leak was found on the interstage cooler of the Wet Gas Compressor (K-6300). The unit was put on circulation so that the leak could be repaired. These emissions are a direct result of the unit being put on circulation.	1.63
FCC-1241	F-1241	9/21/2006 through 9/22/2006	On Thursday, September 21, 2006, FCCU-1241 Maintenance personnel were removing the isolation blanks on E-1475B Stripper Reboiler after the installation of a new reboiler exchanger shell and bundle.	24.08
SRU-545	E-03-SCOT	9/25/2006 through 9/28/2006	Operations executed a planned shutdown of SRU-545 (Sulfur Recovery Unit). The emissions in this report are a direct result of the shutdown procedure.	76.50
HFAU-443	F-13-FLARE	9/27/2006	Operations depressured T-5 Sidedraw from E-33A&B Coolers for Maintenance to repair tubes.	8.00
HFAU-443	F-13-FLARE	9/30/2006	During the startup of the T6 depropanizer, a false level indication resulted in PCV-68 opening and PSV-40 popping to the flare. PSV-68 was open for approximately 30 minutes and PSV-40 popped for approximately 20 minutes after the PSV opened.	0.83
HFAU-443	F-13-FLARE	10/1/2006 through 10/2/2006	The initiating cause of this incident was a failed motor for F-8 Isobutane charge pump. The motor overheated and shutdown.	17.43
MVCU	MC-24/25	10/6/2004	Failure to prevent visible emissions from the two Marine Vapor Combustors MC-24 and MC-25 on October 6, 2004.	0.22
SRU-546	E-04-SCOT E-05-FLARE	10/8/2006	Power Station 5 Switch Yard (PS 5 Switch Yard) contains two busses, Bus A & Bus B. The two busses are fed by 69 kV 1005A & 1005B circuits, respectively, from the Salt Grass substation.	7.00

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
DCU-843, HCU-942	E-23-FLARE	10/10/2006 through 10/11/2006	On October 10, 2006 DCU-843 (coker) experienced a unit upset. T-5200 coker fractionator bottoms pumps (recirculation and heater charge pumps) both experienced an excessive amount of coke fines which caused a loss of suction pressure.	17.75
SRU-545	E-03-SCOT	10/11/2006 through 10/14/2006	Operations executed a planned startup of SRU-545 (Sulfur Recovery Unit). The emissions in this report are a direct result of the startup procedure.	61.37
DHT-246	E-23-FLARE	10/17/2006 through 11/3/2006	The emissions in this report are a direct result of the commissioning and initial startup activities for the new DHT-246. The unit was pressured up with hydrogen and then purged to the flare several times on October 17 & 18.	416.25
CRU-1344, FCC-1241, GTU-245, GFU-244, SGRU-1242, SRU-543	F-103FLARE F-22-FLARE E-01-WGS E-01-SCOT	10/18/2006 through 10/20/2006	On October 18, 2006, the Port Arthur Refinery was in the process of upgrading the electrical supply system in the refinery. The project included isolating electrical power from Entergy at 5 Power Station (PS).	36.78
SRU-545	E-03-SCOT	10/24/2006	SCOT III Inline Heater unexpectedly tripped off due to electrical issues. This resulted in higher than normal SO2 concentrations at the incinerator stack. Visible emissions could be seen from the Incinerator stack for a few minutes when the upset first began.	3.30
FCC-1241	F-22-FLARE	10/25/2006	At approximately 1:00 PM, on Wednesday, 10/25/06, the pressure transmitter for the Depropanizer Overhead Coolers Bypass Control Valve, PC-1601, began reading inconsistently with the tower bottoms pressure and the drum pressure.	2.00
ATU-7842	E-23-FLARE	11/6/2006	On Monday, November 6th, 2006, the DHT-246 (Diesel Hydrotreater) unit was going through its initial start-up. Rich amine from DHT-246 was being routed to ATU-7842 (Amine Treating Unit) for treatment, with the acid gas being routed to flare.	1.27
SRU-543/4/5	E-02-SCOT E-01-SCOT E-05-FLARE	11/12/2006 through 11/13/2006	On Sunday, November 12, 2006, at 12:30 AM, the north SRU complex units began to go off ratio due to hydrocarbons in the feed. Operations immediately began to add air to try and get back in ratio.	23.52
AVU-146	F-19-FLARE	11/15/2006	On November 15, 2006, AVU-146 Crude Unit experienced an unexpected unit upset. C-102 and C-102B Vacuum Gas Compressors tripped off-line. Both compressors experienced high temperature alarms and trips.	1.43

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
RFG System	E-01-SCOT F-103-FLARE E-05-FLARE E-01-146 E-01-1344 E-02-SCOT F-22-FLARE F-13-FLARE	11/23/2006 through 11/25/2006	On Thursday, November 23, 2006 at approximately 4:18 PM the main feeders to Power Plant 1 (PP1) from Saltgrass Substation tripped as a result of a ground fault on the refinery 13.8 kV system.	41.25
DCU-843, DHT-246, HCU-942, SGRU-1242, All Heaters	F-103FLARE E-23-FLARE E-01-WGS E-04-SCOT E-05-FLARE E-01-SCOT F-BH-15	11/26/2006 through 12/5/2006	On Sunday morning, November 26, 2006, Operations personnel discovered a one-alarm fire on the insulation of the DCU-843 (Coker) blowdown line (inlet line to D-4000 Blowdown drum).	208.05
FLARE-05, SCOT-I, SCOT-II, SCOT-IV, SRU-544	E-23-FLARE E-05-FLARE	12/7/2006 through 12/10/2006	On Wednesday, December 7, 2006, at approximately 10:30 a.m., maintenance personnel discovered oil on the insulation of a 36 inch line near D-4000 blowdown drum on DCU-843.	79.17
HFAU-443	F-13-FLARE	12/7/2006	Operations depressured E-33A&B in order to repair a VOC leak on C1-2A normal butane condensers outlet nozzle.	4.00
FCC-1241, BH-15	F-BH-15	12/11/2006 through 12/12/2006	On December 11, 2006 FCCU-1241 experienced an operational upset. K-1900 Absorber Gas Compressor tripped unexpectedly at approximately 4:36 p.m.	22.17
FCC-1241	F-22-FLARE	12/16/2006	Operations shutdown K-1900 absorber gas compressor so Maintenance could safely work on the compressor control system. A representative from the compressor manufacturer was on-site to assist with troubleshooting.	3.38
DCU-843	E-23-FLARE	1/1/2007	On January 1, 2007, DCU-843 experienced an unexpected operational upset. The debutanizer tower and overhead system pressure increased and excess system pressure was relieved through process safety valve, PSV-690, to Flare 23.	0.18
FCC-1241	F-22-FLARE	1/6/2007	Operations shutdown K-1900 absorber gas compressor so Maintenance could safely adjust the settings on the compressor control system. A representative from the compressor manufacturer was on-site to assist with troubleshooting.	4.05
GFU-243	E-20-FLARE	1/7/2007 through 1/8/2007	Operations will startup GFU-243 (Gulfining Unit) after being shutdown for a planned unit turnaround.	24.00

Process Unit	Emission Point	Date	Description	Duration (Hrs.)
FCC-1241	F-22-FLARE	1/9/2007	K-1900 absorber gas compressor unexpectedly tripped offline on two different occasions. When the compressor tripped, absorber gas was routed to the flare.	13.08
AVU-147	E-23-FLARE	1/13/2007 through 1/14/2007	Operations plans to startup the new AVU-147 (Atmospheric & Vacuum Unit).	24.00
FCC-1241, SRU-543, SRU-545	F-22-FLARE E-01-SCOT E-03-SCOT	1/16/2007	An off-site steam producer experienced an upset with their steam turbine generator. The upset caused their 650 psi and 125 psi steam header pressures to decrease. The Premcor Port Arthur Refinery consumes steam from these headers to run turbines on various types of equipment. The decrease in the steam header pressures caused interruptions in process equipment which led to unit upsets.	6.33
SRU-544, SWS-8746	E-05-FLARE E-02-SCOT	1/27/2007 through 2/3/2007	Operations plan to shutdown SWS-8746 (Sour Water Stripper) and SRU-544 (Sulfur Recovery Unit), including SCOT II Tailgas Incinerator, as part of a planned unit turnaround.	168.00
HCU-942	E-23-FLARE	2/1/2007 through 2/4/2007	Operations will shutdown HCU-942 (Hydrocracker) for a planned unit turnaround.	72.00