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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA Plaintiff, and STATE OF PENNSYLVANIA CITY OF PHILADELPHIA STATE OF OKLAHOMA STATE OF OHIO Plaintiff/Intervenors, v. SUNOCO, INC. Defendant,	)	CIVIL ACTION NO. <u>CONSENT DECREE</u>

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WHEREAS, plaintiff, the United States of America ("Plaintiff" or "the United States"), by the authority of the Attorney General of the United States and through its undersigned counsel, acting at the request and on behalf of the United States Environmental Protection Agency ("EPA"), has simultaneously filed a Complaint and lodged this Consent Decree against Sunoco, Inc. ("Sunoco"), for alleged environmental violations at Sunoco's four petroleum refineries located in Marcus Hook, Pennsylvania/Claymont, Delaware; Philadelphia, Pennsylvania; Toledo, Ohio; and Tulsa, Oklahoma;

WHEREAS, the United States alleges that Sunoco has violated and/or continues to violate the following statutory and regulatory provisions:

1) Prevention of Significant Deterioration ("PSD") requirements found at Part C of Subchapter I of the Clean Air Act (the "Act"), 42 U.S.C. § 7475, and the regulations promulgated thereunder at 40 C.F.R. § 52.21 (the "PSD Rules"); the portions of the applicable state implementation plans ("SIPs") and related rules adopted as required by 40 C.F.R. §§ 51.165 and 51.166; and "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) and at 40 C.F.R. Part 51, Appendix S, and at 40 C.F.R. § 52.24 ("PSD/NSR Regulations"), for heaters and boilers and fluid catalytic cracking unit catalyst regenerators for NO_x, SO_2, CO, and PM;

2) New Source Performance Standards ("NSPS") found at 40 C.F.R. Part 60, Subparts A and J, under Section 111 of the Act, 42 U.S.C. § 7411 ("Refinery NSPS Regulations"), for sulfur recovery plants, fuel gas combustion devices, and fluid catalytic cracking unit catalyst regenerators;

3) Leak Detection and Repair ("LDAR") requirements promulgated pursuant to Sections 111 and 112 of the Act, and found 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 ("LDAR Regulations"); and

4) National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Benzene Waste Operations promulgated pursuant to Section 112(e) of the Act, and found at 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP Regulations").

WHEREAS, the United States has issued the following Findings and Notices of Violation to Sunoco: Finding of Violation for Marcus Hook - Region III-02-01-PA (12/20/01) (40 C.F.R. Part 61, Subpart FF); Notice of Violation for Marcus Hook - Region III-02-02-PA (12/20/01) (PSD); Notice of Violation for Philadelphia Refinery - Region III-02-01-PA (12/20/01) (PSD); Finding of Violation for Toledo Refinery - EPA-5-02-01-OH (12/19/01) (40 C.F.R. Part 61, Subpart FF and 40 C.F.R. Part 60, Subparts CC, GGG, and VV); Notice and Finding of Violation for Toledo Refinery - EPA-5-02-OH-02 (12/19/01) (NSR; 40 C.F.R. Part 60, Subparts A and J); and Finding of Violation for Toledo Refinery - EPA-5-02-01-OH (40 C.F.R. Part 60, Subparts FF, VV, and GGG; 40 C.F.R. Part 63, Subpart CC).

WHEREAS, the United States also specifically alleges that, upon information and belief, Sunoco has been and/or continues to be in violation of the SIPs and other state and local rules, regulations and permits adopted or issued by the states in which the Sunoco Refineries are located to the extent that such plans, rules, regulations, and permits implement, adopt, or incorporate the above-described Federal requirements;

WHEREAS, on March 18, 2005, PADEP issued a Notice of Violation to Sunoco alleging, among other things, PSD and NSR violations at the Marcus Hook Refinery;

WHEREAS, AMS issued the following Notices of Violation to Sunoco at the Philadelphia Refinery: Notice of Violation as a result of a fire at the 860 reformer (9.8.00); Notice of Violation as a result of a fire at the 210 crude unit (9.8.00); Notice of Violation regarding process upset at 868 (9.8.00); Notice of Violation for alleged SO_2 concentration exceedances and excess CEM downtime at the 867 unit (9.13.00); Notice of Violation for FCC rate exceedances on 8.12-13.00 and 2.8-9.01 (5.18.01); Notice of Violation for alleged SO_2 emission limit exceedances at the 867 unit (7.26.01); Notice of Violation for late submittal and alleged discrepancies in refinery emission inventory and statement for the year 2000 (9.28.01); Notice of Violation regarding alleged violation of carbon canister requirements under the benzene NESHAP (10.5.01); Notice of Violation regarding alleged violation of carbon canister requirements under the benzene NESHAP (8.5.02); Notice of Violation regarding alleged violation of carbon canister requirements under the benzene NESHAP (10.20.02); Notice of Violation for the Philadelphia Refinery as a result of an AMS audit, including failure to comply with the plan approval for 433 H-1 heater and stack test source testing and failure to report certain actual emissions in the emission inventory for 2001 (11.5.02); Notice of Violation regarding treatment of sour water stripper gas at 1232 and 867 units (2.10.03); multiple Notices of Violation for opacity exceedances from 4.24.98 to 7.24.03; multiple Notices of Violation for malodors detected beyond the property line of the Philadelphia Refinery from 12.4.98 to 3.12.03; Notice of Violation for alleged SO_2 concentration exceedances at the 867 unit and failure to timely submit the 2003 Title V annual certification (8.27.03); Notice of

Violation for alleged discrepancies in refinery emission inventories and statements for 2000-2002 (1.20.04); Notice of Violation regarding stipulated penalties under a consent decree for a deNO_x additive trial at the 868 FCCU (1.30.04); Notice of Violation regarding deviations identified in Sunoco's Title V semi-annual monitoring reports (8.20.04); Notice of Violation regarding NO_x RACT exceedances at H-400/401 during periods in 2001 through 2003 (12.30.04); and Notice of Violation regarding deviations identified by Sunoco in its Title V annual compliance certifications and semi-annual deviation reports and deviations discovered by AMS from CEM and emission inventory data (5.16.05);

WHEREAS, Sunoco denies that it has violated and/or continues to violate the foregoing statutory, regulatory, SIP provisions, and other state and local rules, regulations and permits incorporating and implementing the foregoing federal requirements, and maintains that it has been and remains in compliance with all applicable statutes, regulations, and permits and is not liable for civil penalties and injunctive relief as alleged in the Complaint;

WHEREAS, the United States is engaged in a federal strategy for achieving cooperative agreements with U.S. petroleum refineries to achieve across-the-board reductions in emissions ("Global Settlement Strategy");

WHEREAS, Sunoco consents to the simultaneous filing of the Complaint and lodging of this Consent Decree against Sunoco despite its denial of the allegations in the Complaint to accomplish its objective of cooperatively reconciling the goals of the United States, Sunoco and the Plaintiff/Intervenors under the Clean Air Act and the corollary state and local statutes, and therefore agrees to undertake the installation of air

pollution control equipment and enhancements to its air pollution management practices at the Sunoco Refineries to reduce air emissions by participating in the Global Settlement Strategy;

WHEREAS, by entering into this Consent Decree, Sunoco is committed to proactively resolving environmental concerns relating to its operations;

WHEREAS, the United States and the Plaintiff/Intervenors anticipate that the Affirmative Relief/Environmental Projects identified in Section V of this Consent Decree, once fully implemented, will reduce annual emissions from the Sunoco Refineries by the following amounts: 1) nitrogen oxides by approximately 4,476 tons per year; and 2) sulfur dioxide by approximately 19,526 tons per year.

WHEREAS, EPA recently issued PSD Rules and PSD/NSR Regulations, see 67 Fed. Reg. 80186 (2002), that identify and address "Pollution Control Projects" and "Clean Units" and the applicability of PSD/NSR permitting requirements to such Projects or Units;

WHEREAS, EPA previously issued guidance ("Pollution Control Projects and New Source Review (NSR) Applicability," July 1, 1994) identifying and addressing "Pollution Control Projects" and the applicability of PSD/NSR permitting requirements to such Projects;

WHEREAS, EPA agrees that under the recently issued PSD Rules and PSD/NSR Regulations that identify and address "Clean Units," see 67 Fed. Reg. 80186, units that accept the following emission limits under this Consent Decree, and resulting permits, may be considered as "Clean Units" with respect to the identified pollutants:

For FCCUs: 20/40 ppmvd NO_x and 25/50 ppmvd SO_2 at 0% O_2 on a 365-day/7-day rolling average basis, 100 ppmvd CO at 0% O_2 on a rolling 365-day rolling

average basis, and 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis

For Heaters and Boilers: 0.020 lbs NO_x/mmBTU

Units with higher limits may be considered as "Clean Units" under applicable rules at the discretion of the permitting agency.

WHEREAS, it is Pennsylvania DEP's position that pursuant to applicable rules, state permitting agencies reserve the right to establish more stringent requirements, including emission limits for "Clean Units."

WHEREAS, EPA agrees that under recently issued PSD Rules and PSD/NSR Regulations that identify and address "Pollution Control Projects," see 67 Fed. Reg. 80186 and under prior EPA guidance ("Pollution Control Projects and New Source Review (NSR) Applicability," July 1, 1994), the following activities may be considered as "Pollution Control Projects" under such rules, regulations, and guidance, provided that Sunoco complies with the requirements for "Pollution Control Projects" under applicable federal, state, and local regulations and policies.

For FCCUs: Activities required to comply with Sections V.A, V.B, V.C, and V.D of this Consent Decree (reduction of NO_x, SO_2, PM, and CO emissions by use of hardware and other controls).

For Heaters and Boilers: Activities undertaken to comply with Section V.F of this Consent Decree (reduction of NO_x emissions by at least 2,189 tons through the installation of Qualifying Controls (as defined in Paragraph 10.JJ).

WHEREAS, it is Pennsylvania DEP's position that pursuant to applicable rules, state permitting agencies reserve the right to establish more stringent requirements for "Pollution Control Projects."

WHEREAS, with respect to the provisions of Section V.K ("Control of Acid Gas Flaring Incidents and Tail Gas Incidents") of this Consent Decree, EPA maintains that

"[i]t is the intent of the proposed standard [40 C.F.R. § 60.104] that hydrogen-sulfide-rich gases exiting the amine regenerator [or sour water stripper gases] be directed to an appropriate recovery facility, such as a Claus sulfur plant," see Information for Proposed New Source Performance Standards; Asphalt Concrete Plants, Petroleum Refineries, Storage Vessels, Standard Lead Smelters and Refineries, Brass or Bronze Ingot Production Plants, Iron and Steel Plants, Sewage Treatment Plants, Vol. 1, Main Text at 28;

WHEREAS, EPA further maintains that the failure to direct hydrogen-sulfide-rich gases to an appropriate recovery facility – and instead to flare such gases under circumstances that are not sudden or infrequent or that are reasonably preventable – circumvents the purposes and intentions of the standards at 40 C.F.R. Part 60, Subpart J;

WHEREAS, EPA recognizes that "Malfunctions," as defined in Paragraph 10.AA of this Consent Decree and 40 C.F.R. § 60.2, of the "Sulfur Recovery Plants" or of "Upstream Process Units" may result in flaring of "Acid Gas" or "Sour Water Stripper Gas" on occasion, as those terms are defined herein, and that such flaring does not violate 40 C.F.R. § 60.11(d) or NSPS Subpart J if the owner or operator, to the extent practicable, maintains and operates such units in a manner consistent with good air pollution control practice for minimizing emissions during these periods;

WHEREAS, Sunoco operates the Philadelphia 868 FCCU pursuant to Permit # 00184 issued by the Philadelphia AMS on March 22, 2002, which incorporates conditions set forth in a 1994 PSD/NSR Consent Decree entered into between Sunoco and the United States, as amended in 2000;

WHEREAS, discussions between the Parties have resulted in the settlement embodied in this Consent Decree;

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

WHEREAS, by signing this Consent Decree, Sunoco has waived the right of service of process, and Plaintiffs have agreed that Sunoco need not answer the complaint;

WHEREAS, EPA sought and Sunoco provided a substantial amount of information concerning refinery operations and configuration;

WHEREAS, the parties engaged in numerous meetings over the past five years to resolve this matter;

WHEREAS, notwithstanding the foregoing reservations, the Parties agree that: (a) settlement of the matters set forth in the Complaint (filed herewith) is in the best interests of the Parties and the public; and (b) entry of the Consent Decree without litigation is the most appropriate means of resolving this matter;

WHEREAS, the Parties recognize, and the Court by entering the Consent Decree finds, that the Consent Decree has been negotiated at arms length and in good faith and that the Consent Decree is fair, reasonable, and in the public interest;

NOW THEREFORE, with respect to the matters set forth in the Complaint and in Section XVI of this Consent Decree ("Effect of Settlement"), and before the taking of any testimony, without adjudication of any issue of fact or law, and upon the consent and agreement of the Parties to the Consent Decree, it is hereby ORDERED, ADJUDGED, and DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action and over the Parties pursuant to 28 U.S.C. §§ 1331, 1345 and 1355. In addition, this Court has jurisdiction over the subject matter of this action pursuant to Sections 113(b) and 167 of the CAA, 42 U.S.C. §§ 7413(b) and 7477. The United States' complaint states a claim upon which relief may be granted for injunctive relief against Sunoco under the Clean Air Act. Authority to bring this suit is vested in the United States Department of Justice by 28 U.S.C. §§ 516 and 519, Section 305 of the CAA, 42 U.S.C. § 7605.

2. Venue is proper in the Eastern District of Pennsylvania pursuant to Section 113(b) of the CAA, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) and (c), and 1395(a). Sunoco consents to the personal jurisdiction of this Court, waives any objections to venue in this District, and does not object to the intervention of the Plaintiff/Intervenors in this action.

3. Notice of the commencement of this action has been given to the Commonwealth of Pennsylvania, the State of Ohio, the State of Oklahoma, and the City of Philadelphia 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 CAA, 42 U.S.C. § 7413(b).

II. APPLICABILITY AND BINDING EFFECT

4. The provisions of the Consent Decree shall apply to the Sunoco Refineries. The provisions of the Consent Decree shall be binding upon the United States, the Plaintiff/Intervenors, and Sunoco and its agents, successors, and assigns.

5. Sunoco agrees not to contest the validity of the Consent Decree in any subsequent proceeding to implement or enforce its terms.

6. Effective from Date of Entry of the Consent Decree until termination pursuant to Paragraph 245, Sunoco agrees that the Sunoco Refineries are covered by this Consent Decree. Effective from Date of Entry of the Consent Decree, Sunoco shall give written notice of the Consent Decree to any successors in interest to any of the Sunoco Refineries prior to the transfer of ownership or operation of any portion of any of the Sunoco Refineries and shall provide a copy of the Consent Decree to any successor in interest. Sunoco shall notify the United States and the Appropriate Plaintiff/Intervenor in accordance with the notice provisions set forth in Paragraph 240 ("Notice"), of any successor in interest at least 30 days prior to any such transfer. The requirements of this Paragraph 6 shall not apply to transfers to Sunoco affiliates.

7. Sunoco shall condition any transfer, in whole or in part, of ownership of, operation of, or other interest (exclusive of any non-controlling, non-operational shareholder interest) in, any of the Sunoco Refineries upon the execution by the transferee of a modification to the Consent Decree, which makes the terms and conditions of the Consent Decree that apply to the respective Sunoco Refinery applicable to the transferee. In the event of such transfer, Sunoco shall notify the parties listed in Paragraph 240. By no earlier than 30 days after such notice, Sunoco may file a motion to modify the Consent Decree with the Court to make the terms and conditions of the Consent Decree applicable to the transferee. Sunoco shall be released from the obligations and liabilities of this Consent Decree unless the United States opposes the motion and the Court finds the transferee does not have the financial and technical ability to assume the obligations and liabilities under the Consent Decree. The requirements of this Paragraph 7 shall not apply to transfers to Sunoco affiliates.

8. Except as provided in Paragraph 7, Sunoco shall be solely responsible for ensuring that performance of the work contemplated under this Consent Decree is undertaken in accordance with the deadlines and requirements contained in this Consent Decree and any attachments hereto. Sunoco shall provide a copy of the applicable provisions of this Consent Decree to each consulting or contracting firm that is retained to perform work required under Sections V.M or V.N of this Consent Decree, upon execution of any contract relating to such work. Copies of the relevant portions of the Consent Decree do not need to be supplied to firms who are retained solely to supply materials or equipment to satisfy requirements under Sections V.M or V.N of this Consent Decree.

III. OBJECTIVES

9. It is the purpose of the Parties in this Consent Decree to further the objectives of the federal Clean Air Act, the Pennsylvania air pollution control rules, PA Code Title 25, Subpart C, Article III and the Pennsylvania State Implementation Plan, the Ohio air pollution control rules, Ohio Administrative Code Chapters 3704 and 3745 and the Ohio State Implementation Plan, the Oklahoma air pollution control regulations, Oklahoma Administrative Code, Title 252, Chapter 100 and the Oklahoma State Implementation Plan, and the City of Philadelphia Air Management Code and the City of Philadelphia Air Management Regulations I - XIII.

IV. DEFINITIONS

10. Unless otherwise defined herein, terms used in the Consent Decree shall have the meaning given to those terms in the Clean Air Act, and the implementing regulations promulgated thereunder. The following terms used in the Consent Decree

shall be defined, solely for purposes of the Consent Decree and the reports and documents submitted pursuant thereto, as follows:

A. "365-day rolling average" shall include only operating days

B. "7-day rolling average" shall include only operating days, but shall also exclude Start-up, Shutdown, and Malfunction.

C. "Acid Gas" shall mean any gas that contains hydrogen sulfide and is generated at a refinery by the regeneration of an amine solution.

D. "Acid Gas Flaring" or "AG Flaring" shall mean the combustion of an Acid Gas and/or Sour Water Stripper Gas in an AG Flaring Device.

E. "Acid Gas Flaring Device" or "AG Flaring Device" shall mean any device at the Sunoco Refineries, including but not limited to those devices listed in Appendix F, 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 sulfur.

F. "Acid Gas Flaring Incident" or "AG Flaring Incident" shall mean the continuous or intermittent combustion of Acid Gas and/or Sour Water Stripper Gas that results in the emission of sulfur dioxide equal to, or in excess of, 500 pounds in any 24-hour period; provided, however, that if 500 pounds or more of sulfur dioxide have been emitted in a 24-hour period and flaring continues into subsequent, contiguous, non-overlapping 24-hour period(s), each period of which results in emissions equal to, or in excess of 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.

G. "Affiliate" shall mean any other Person that directly, or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with Sunoco. As used in this definition, "control," "controlled by," and "under common control with" shall mean possession, directly or indirectly, of power to direct or cause the direction of management or policies of such Person (whether through ownership of securities or other partnership or ownership interests, by contract or otherwise);

H. "Appropriate Plaintiff/Intervenor" shall mean the following governmental entity, if such entity files a motion to intervene prior to Date of Entry, with respect to the portions of the Marcus Hook Refinery located in Pennsylvania, Pennsylvania Department of Environmental Protection ("PADEP"); with respect to the Philadelphia Refinery, Philadelphia Air Management Services ("AMS"); with respect to the Tulsa Refinery, Oklahoma Department of Environmental Quality ("ODEQ"); and with respect to the Toledo Refinery, Ohio Environmental Protection Agency ("Ohio EPA").

I. "Calendar Quarter" shall mean the three month period ending on March 31st, June 30th, September 30th, and December 31st.

J. "CEMS" shall mean continuous emissions monitoring system.

K. "CO" shall mean carbon monoxide.

L. "COMS" shall mean continuous opacity monitoring system.

M. "Consent Decree" or "Decree" shall mean this Consent Decree, including any and all appendices attached to the Consent Decree.

N. "Current Generation Ultra-Low NO_x Burners" or "Current Generation ULNBs" shall mean those burners that are designed to achieve a NO_x emission rate of 0.020 to 0.040 lb/mmBTU HHV when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual emissions exceed 0.040 lb/mmBTU HHV.

O. "Date of Entry of the Consent Decree" or "Date of Entry" shall mean the date the Consent Decree is approved or signed by the United States District Court Judge.

P. "Date of Lodging" shall mean the date the Consent Decree is lodged with the United States District Court.

Q. "Date of Termination" shall mean termination of this Consent Decree pursuant to Section XVIII.

R. "Day" or "Days" shall mean a calendar day or days.

S. "ESP" shall mean electrostatic precipitator.

T. "FCCU" shall mean a fluidized catalytic cracking unit and its regenerator and associated CO boiler(s) where present.

U. "FCCUCR" shall mean a fluidized catalytic cracking unit catalyst regenerator, as defined in 40 C.F.R. § 60.101.

V. "Flaring Device" shall mean either an AG and/or a HC Flaring Device.

W. "Fuel Oil" shall mean any liquid fossil fuel with sulfur content of greater than 0.05% by weight.

X. "Hydrocarbon Flaring" or "HC Flaring" shall mean the combustion of refinery-generated gases, except for Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, in a Hydrocarbon Flaring Device.

Y. "Hydrocarbon Flaring Device" or "HC Flaring Device" shall mean a flare device (including all devices listed in Appendix G and any flare devices installed after the Date of Lodging) used to safely control (through combustion) any excess volume of a refinery generated gas other than Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas.

Z. "Hydrocarbon Flaring Incident" or "HC Flaring Incident" shall mean the continuous or intermittent Hydrocarbon Flaring, except for Acid Gas or Sour Water Stripper Gas or Tail Gas, at a Hydrocarbon Flaring Device that results in the emission of sulfur dioxide equal to, or greater than five-hundred 500 pounds in any 24-hour period; provided, however, that if 500 pounds or more of sulfur dioxide have been emitted in any 24-hour period and flaring continues into subsequent, contiguous, non-overlapping 24-hour period(s), each period of which results in emissions equal to, or in excess of 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.

AA. "Malfunction" shall mean, as specified in 40 C.F.R. § 60.2, "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."

BB. "Natural Gas Curtailment" shall mean a restriction imposed by a third party limiting Sunoco's ability to obtain or use natural gas.

CC. "Next Generation Ultra-Low NO_x Burners" or "Next Generation ULNBs" shall mean those burners that are designed to achieve a NO_x emission rate of less than or equal to 0.020 lb/mmBTU HHV when firing natural gas at 3% stack oxygen at full design load without air preheat, even if upon installation actual emissions exceed 0.020 lb/mmBTU HHV.

DD. "NO_x" shall mean nitrogen oxides.

EE. "Paragraph" shall mean a portion of this Consent Decree identified by an Arabic numeral.

FF. "PEMS" shall mean predictive emissions monitoring systems developed in accordance with Appendix C to this Consent Decree.

GG. "PM" shall mean particulate matter as measured by 40 C.F.R. Part 60, Appendix A Method 5B or 5F.

HH. "Parties" shall mean the United States, the Plaintiff/Intervenors, and Sunoco.

II. "Plaintiff/Intervenors" shall mean the Commonwealth of Pennsylvania, and the states of Ohio and Oklahoma, and the City of Philadelphia.

JJ. "Qualifying Controls" shall mean, in the context of NO_x controls for heaters and boilers:

i. SCR or SNCR;

ii. Current Generation or Next Generation Ultra-Low NO_x Burners;

iii. Other technologies that Sunoco demonstrates to EPA's satisfaction will reduce NO_x emissions from heaters and boilers to 0.040 lbs per mmBTU or lower; or

iv. Permanent Shutdown of a heater or boiler with revocation of its operating permit.

KK. "Root Cause" shall mean the primary cause(s) of an AG Flaring Incident(s), Hydrocarbon Flaring Incident, or a Tail Gas Incident(s) as determined through a process of investigation.

LL. "SCR" shall mean selective catalytic reduction control technology for NO_x emissions.

MM. "Shutdown," as specified in 40 C.F.R. § 60.2, shall mean the cessation of operation of equipment for any purpose.

NN. "SNCR" shall mean selective non-catalytic reduction control technology for NO_x emissions.

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

PP. "SO_2" shall mean sulfur dioxide.

QQ. "Startup," as specified in 40 C.F.R. § 60.2, shall mean the setting in operation of equipment for any purpose.

RR. "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.

SS. "Sunoco Refinery(ies)" (or "Refinery(ies)") shall mean only Sunoco's four petroleum refineries (or one or more of the four refineries) located in Marcus Hook, Pennsylvania/Claymont**,** Delaware; Philadelphia, Pennsylvania; Toledo, Ohio; and Tulsa, Oklahoma.

TT. "Tail Gas" ("TG") shall mean exhaust from the Claus trains and the Tail Gas Unit ("TGU") section of the SRP.

UU. "Tail Gas Unit" or "TGU" shall mean a control system utilizing a technology for reducing emissions of sulfur compounds from a Sulfur Recovery Plant.

VV. "Tail Gas Incident" shall mean, for the purpose of this Consent Decree, combustion of Tail Gas that either is:

i. Combusted in a flare and results in five-hundred (500) pounds or more of SO_2 emissions in any 24-hour period; or

ii. Combusted in a thermal incinerator and results in excess emissions of 500 pounds or more of SO_2 emissions in any 24-hour period. Only those time periods which are in excess of a SO_2 concentration of 250 ppm (rolling twelve-hour average) shall be used to determine the amount of excess SO_2 emissions from the incinerator, provided, however, that continued combustion of Tail Gas in an incinerator at the Toledo SRP that occurs prior to Sunoco's compliance with Paragraph 43 shall not be a Tail Gas Incident.

Sunoco shall use good engineering judgment and/or other monitoring data during periods in which the SO_2 continuous emission analyzer has exceeded the range of the instrument or is out of service.

WW. "Test Run," for the purposes of Paragraph 36, shall mean those test periods of fuel oil burning necessary to ensure that a heater, boiler, and fuel oil delivery system is capable of delivering and burning fuel oil during natural gas curtailments.

XX. "Torch Oil" shall mean FCCU feedstock or cycle oils that are combusted in the FCCU regenerator to assist in starting up or restarting the FCCU, hot standby of the FCCU, or to maintain regenerator heat balance in the FCCU.

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

ZZ. "WGS" shall mean nonregenerative wet gas scrubber.

V. AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS

A. NO_x Emissions Reductions from FCCUs.

Sunoco shall implement a program to reduce NO_x emissions with the installation and operation of SCR systems or alternate emission reduction technology proposed by Sunoco and approved by EPA at the Marcus Hook FCCU, the Philadelphia 1232 FCCU, and the Toledo FCCU. Sunoco shall apply to incorporate the lower NO_x emission limits into its operating permits and will demonstrate future compliance with the lower emission limits through the use of CEMS. CEMS required under this Paragraph shall be operated and data recorded pursuant to applicable law.

11. **SCR Applications: Marcus Hook, Philadelphia 1232, and Toledo**.

a. By no later than the dates specified, Sunoco shall complete installation and begin operation of an SCR system on the following FCCUs:

Philadelphia 1232:	06.30.08
Marcus Hook:	06.30.13
Toledo:	12.31.09

Sunoco shall design the SCR systems to achieve a NO_x concentration of 20 ppmvd on a 365-day rolling average basis and 40 ppmvd on a 7-day rolling average basis, each at 0% oxygen.

b. For the SCR installation at the Marcus Hook FCCU, Sunoco shall submit reports to PADEP and EPA documenting the status of the project milestones as set forth in Appendix A ("Milestones for Marcus Hook FCCU SCR") no later than the dates listed for each of the milestones in Appendix A.

c. If reasonably feasible, Sunoco shall accelerate the schedule for installation of SCR at the Marcus Hook FCCU to June 15, 2010. Sunoco shall determine reasonable feasibility based upon (1) Sunoco's experience with the installation of controls required

by this Consent Decree at Philadelphia 1232 and Toledo; (2) availability of resources after the first turnaround following the Date of Entry and the installation of controls at Toledo; (3) relevant operational issues at the Marcus Hook FCCU; (4) Sunoco's ability to secure a permit for the accelerated installation of SCR at the Marcus Hook FCCU; and (5) any other relevant factors. Sunoco shall inform PADEP and EPA of its determination as to feasibility by December 31, 2008.

d. In lieu of SCR, Sunoco may install alternate technology if approved by EPA and the Appropriate Plaintiff/Intervenor that achieves the emissions limits required by Paragraph 12.

12. **SCR Outlet Emission Limits**.

a. Sunoco shall operate its FCCUs so that NO_x emissions from these units do not exceed 20 ppmvd based on a 365-day rolling average or 40 ppmvd based on a 7-day rolling average, each at 0% oxygen, according to the following schedule:

Philadelphia 1232:	06.30.08
Marcus Hook:	06.30.13
Toledo:	12.31.09

b. For the purposes of this Consent Decree only, NO_x emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 40 ppmvd 7-day emissions limit, provided that during such periods Sunoco implements good air pollution control practices to minimize NO_x emissions.

13. **Demonstrating Compliance with SCR Emission Limits**.

a. By no later than Date of Entry, Sunoco shall use its existing NO_x CEMS at the Marcus Hook and Philadelphia 1232 FCCUs, and shall install a CEMS at the Toledo

FCCU by 12.31.09, to monitor the performance of the FCCUs, and to report compliance with the terms and conditions of this Consent Decree.

b. Sunoco shall install, certify, calibrate, maintain, and operate all CEMS required by this Consent Decree in accordance with the requirements of 40 C.F.R. §§ 60.11, 60.13, and Part 60 Appendices A, B, and F. These CEMS will be used to demonstrate compliance with emission limits. CEMS required under this Paragraph shall be operated and data recorded pursuant to applicable law. Sunoco shall make CEMS data available to EPA and the Appropriate Plaintiff/Intervenor upon demand as soon as practicable.

B. SO_2 Emissions Reductions from FCCUs.

Sunoco shall implement a program to reduce SO_2 emissions from the Marcus Hook, Philadelphia 1232, and Toledo FCCUs by the installation and operation of three new WGS or alternate emission reduction technology proposed by Sunoco and approved by EPA and the Appropriate Plaintiff/Intervenor. Sunoco shall apply to incorporate the lower SO_2 emission limits into its operating permits and will demonstrate future compliance with the lower emission limits through the use of CEMS. CEMS required under this Paragraph shall be operated and data recorded pursuant to applicable law.

14. **WGS Applications: Marcus Hook, Philadelphia 1232, and Toledo**.

a. By no later than the dates specified, Sunoco shall complete installation and begin operation of a WGS at the following FCCUs:

Philadelphia 1232:	06.30.08
Toledo:	12.31.09
Marcus Hook:	06.30.13

Sunoco shall design the WGS to achieve an SO_2 concentration of 25 ppmvd on a 365-day rolling average basis and 50 ppmvd on a 7-day rolling average basis, each at 0% oxygen.

b. In lieu of a WGS, Sunoco may install alternate technology as approved by EPA that achieves the emissions limits required by Paragraph 15.a.

c. If reasonably feasible, Sunoco shall accelerate the schedule for installation of the WGS at the Marcus Hook FCCU to June 15, 2010. Sunoco shall determine reasonable feasibility based upon (1) Sunoco's experience with the installation of controls required by this Consent Decree at Philadelphia 1232 and Toledo; (2) availability of resources after the first turnaround following the Date of Entry and the installation of controls at Toledo; (3) relevant operational issues at the Marcus Hook FCCU; (4) Sunoco's ability to secure a permit for the accelerated installation of the WGS at the Marcus Hook FCCU; and (5) any other relevant factors. Sunoco shall inform PADEP and EPA of its determination as to feasibility by December 31, 2008.

15. **WGS Outlet Emission Limits**.

a. Sunoco shall operate its FCCUs so that SO_2 emissions from these units do not exceed 25 ppmvd based on a 365-day rolling average or 50 ppmvd based on a 7-day average, each at 0% oxygen, according to the following schedule:

Philadelphia 1232:	06.30.08
Toledo:	12.31.09
Marcus Hook:	06.30.13

For the purposes of this Consent Decree only, SO_2 emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 50 ppmvd 7-day emissions limit, provided that during such periods Sunoco implements good air pollution control practices to minimize SO_2 emissions.

b. By no later than Date of Entry for the Marcus Hook and Philadelphia 1232 FCCUs, and by no later than 12.31.09 for the Toledo FCCU, Sunoco shall use an SO_2 CEMS to monitor the performance of the FCCU, and to report compliance with the terms and conditions of this Consent Decree. Sunoco shall make CEMS data available to EPA upon demand.

c. Sunoco shall install, certify, calibrate, maintain, and operate all CEMS required by this Consent Decree in accordance with the requirements of 40 C.F.R. §§ 60.11, 60.13, and Part 60 Appendices A, B, and F. These CEMS will be used to demonstrate compliance with emission limits. CEMS required under this Paragraph shall be operated and data recorded pursuant to applicable law.

C. <u>Control of PM Emissions from FCCUs.</u>

Sunoco shall implement a program to control PM emissions from its FCCUs as follows:

16. Sunoco shall comply with a PM emission limit of 1 pound PM per 1000 pounds coke burned at all of its FCCUs by the dates specified in Paragraph 24. Additionally, at each FCCU where Sunoco has agreed to install a WGS, Sunoco also agrees to do one of the following: (1) continue to operate its existing ESP, (2) install a new ESP, or (3) accept an emissions limit of 0.5 pound PM per 1000 pounds coke burned.

17. For the purposes of this Consent Decree only, PM emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 0.5 or 1 pound PM per 1000 pounds coke burned limit, provided

that during such periods Sunoco implements good air pollution control practices to minimize PM emissions.

18. Sunoco shall utilize its existing COMS on each FCCU at each Refinery by no later than Date of Entry. Sunoco shall certify, calibrate, maintain, and operate all COMS required by this Consent Decree in accordance with 40 C.F.R. §§ 60.11, 60.13 and Part 60 Appendix A, and the applicable performance specification test of 40 C.F.R Part 60 Appendix B. Within six (6) months after any PM limit in Paragraph 16 becomes effective at the relevant Refinery, Sunoco shall conduct a stack test pursuant to the protocol specified in 40 C.F.R. 60.106(b)(2) to measure PM emissions on the FCCUs at its Refineries for which such a stack test has not been conducted within a year prior to Date of Lodging. Within nine (9) months after any PM limit in Paragraph 16 becomes effective at the relevant Refinery, Sunoco shall submit a copy of the stack test result to EPA and the Appropriate Plaintiff/Intervenor.

D. <u>Control of CO Emissions from FCCUs</u>.

Sunoco shall implement a program to control CO emissions from Refinery FCCUs as follows:

19. Beginning no later than Date of Entry, Sunoco shall comply with a CO emissions limit of 500 ppmvd at 0% O_2 on a 1-hour average basis at the Marcus Hook, Philadelphia 1232, and Toledo FCCUs. For the purposes of this Consent Decree only, CO emissions during periods of Startup, Shutdown, or Malfunction shall not be used in determining compliance with the 1-hour 500 ppmvd emissions limit, provided that during such periods Sunoco implements good air pollution control practices to minimize CO emissions.

20. By no later than Date of Entry, Sunoco shall comply with a CO emissions limit of 100 ppmvd at 0% O_2 on a 365-day rolling average basis at the Philadelphia 868 FCCU.

21. Beginning no later than Date of Entry for the Marcus Hook, Philadelphia 868, and the Philadelphia 1232 FCCUs, and two (2) years from Date of Entry for the Toledo FCCU, Sunoco shall use a CO CEMS to monitor performance of each FCCU, and to report compliance with the terms and conditions of this Consent Decree.

22. Sunoco shall make CEMS and process data available to EPA upon demand as soon as practicable.

23. Sunoco shall certify, calibrate, maintain, operate, and (where applicable) install all CEMS required by this Consent Decree in accordance with the requirements of 40 C.F.R. § 60.13. CEMS required under this Section V.D shall be operated and data recorded pursuant to applicable law.

E. <u>NSPS Subparts A and J Applicability at FCCU Regenerators</u>.

24. Sunoco's FCCU Regenerators shall be affected facilities subject to the requirements of NSPS Subparts A and J for each relevant pollutant by the dates specified below:

Marcus Hook:

SO_2:	Date of Entry
PM:	Date of Entry
CO:	Date of Entry
Opacity:	Date of Entry

Philadelphia 1232:

SO_2:	06.30.08
PM:	Date of Entry
CO:	Date of Entry
Opacity:	Date of Entry

Philadelphia 868:

SO_2:	Date of Entry
PM:	Date of Entry
CO:	Date of Entry
Opacity:	Date of Entry

Toledo:

SO_2:	12.31.09
PM:	Date of Entry
CO:	Two years from Date of Entry
Opacity:	12.31.09

25. For Sunoco's FCCU Regenerators identified above that are or become affected facilities under NSPS Subpart J pursuant to Section V.E of this Consent Decree, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8.

F. <u>NO_x Emission Reductions from Heaters and Boilers</u>.

Sunoco shall implement a program to reduce NO_x emissions from Refinery heaters and boilers greater than 40 mmBTU/hr through the installation of NO_x controls and the acceptance of permit emission limits on the units controlled to meet the requirements of Paragraph 27 or the Shutdown of certain units and the relinquishment of their permits. Sunoco will monitor compliance with the emission limits through source testing, use of CEMS, or the use of a PEMS. CEMS required under this Paragraph shall be operated and data recorded pursuant to applicable law.

26. **<u>Installation of NO_x Control Technology</u>**. Sunoco shall select one or any combination of "Qualifying Controls" to satisfy the requirements of Paragraphs 27, 29, and 30.

27. On or before eight (8) years from Date of Entry, Sunoco shall use Qualifying Controls to reduce NO_x emissions from the heaters and boilers greater than 40 mmBTU per hour by at least 2,189 tons per year, so as to satisfy the following inequality:

$$\sum_{i=1}^{n} [(E_{actual})_i - (E_{allowable})_i] \geq 2{,}189 \text{ tons of } NO_x \text{ per year}$$

Where:

$(E_{allowable})_i$	=	[(The permitted allowable pounds of NO_x per million BTU for heater or boiler i, or the requested portion of the permitted reduction pursuant to Paragraph 100)/(2000 pounds per ton)] x [(the lower of permitted or maximum heat input rate capacity in million BTU per hour for heater or boiler i) x (the lower of 8760 or permitted hours per year)];
$(E_{actual})_i$	=	The tons of NO_x per year prior actual emissions during calendar years 2001 and 2002 (unless prior actuals exceed allowable emissions, then use allowable) as shown in Appendix B for controlled heater or boiler i; and
n	=	The number of heaters and boilers with Qualifying Controls at all Refineries from those listed in Appendix B that are selected by Sunoco to satisfy the requirements of the equation set forth in this Paragraph.

Permit limits established to implement this Paragraph may use a 365-day rolling average for heaters and boilers that use a CEMS or PEMS to monitor compliance. Otherwise, permit limits established to implement this Paragraph shall be based on the averaging periods set forth in the applicable reference test method.

For heaters and boilers at the Philadelphia and Marcus Hook Refineries at which Qualifying Controls are used to meet the requirements of this section V.F, those Qualifying Controls shall be installed by no later than June 15, 2010, unless this date is extended jointly by PADEP and/or AMS, and EPA.

28. Appendix B to this Consent Decree ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour") provides the following information for each of the heaters and boilers with a maximum heat input capacity greater than 40 mmBTU per hour at each Refinery:

(1) The maximum heat input capacity and, if less, the allowable heat input capacity, in mmBTU/hr (HHV);

(2) The actual NO_x emission rate for both calendar years 2001 and 2002 in lb/mmBTU (HHV) and tons per year; and

(3) The type of data used to derive the emission estimate (i.e., emission factor, stack test, or CEMS data) and the averaging period for the emissions data.

29. By four (4) years from Date of Entry, Sunoco shall install sufficient Qualifying Controls and have applied for emission limits from the appropriate permitting authority sufficient to achieve two-thirds of the combined NO_x emissions reductions required by Paragraph 27. By four (4) years and three (3) months from Date of Entry, Sunoco shall provide EPA with a report showing how it satisfied the requirement of this Paragraph. For purposes of this Consent Decree, "applied for" shall mean that Sunoco has submitted a complete and timely application for the appropriate permit, permit modification, and/or other enforceable permit vehicle.

30. On or before eight (8) years from Date of Entry for the Toledo and Tulsa Refineries, and on or before June 15, 2010 for the Philadelphia and Marcus Hook Refineries, heaters and boilers with Qualifying Controls shall represent at least 30% of

the total maximum heat input capacity or, if less, the allowable heat input capacity, of all heaters and boilers greater than 40 mmBTU per hour located at each Refinery. The heater and boiler capacity at each Refinery shall be based on the maximum heat input capacity during the 2001/2002 baseline period. Any Qualifying Controls can be used to satisfy this requirement, regardless of when the Qualifying Controls were installed.

31. Sunoco shall submit a detailed NO_x Control Plan ("Control Plan") to EPA for review and comment by no later than four (4) months after Date of Entry of the Consent Decree, with annual updates every twelve (12) months thereafter ("Updates") until compliance with Paragraph 30 of the Consent Decree. The Control Plan and its Updates shall describe the achieved and anticipated progress of the NO_x emission reductions program for heaters and boilers and shall contain the following for each heater and boiler greater than 40 mmBTU/hr that Sunoco plans to use to satisfy the requirements of Paragraphs 27, 29, and 30:

a. All of the information in Appendix B;

b. Identification of the type of Qualifying Controls installed or planned with the date installed or planned (including identification of the heaters and boilers to be permanently shut down);

c. To the extent limits exist or are planned, the allowable NO_x emission rates (in lbs/mmBTU (HHV), with averaging period) and allowable heat input rate (in mmBTU/hr (HHV)) obtained or planned with dates obtained or planned;

d. The results of emissions tests and annual average CEMS or PEMS data (in ppmvd at 3% O_2 and lb/mmBTU) conducted pursuant to Paragraph 32, and tons per year; and

e. The amount in tons per year applied or to be applied toward satisfying Paragraph 27.

Appendix B and the Control Plan and Updates required by this Paragraph shall be for informational purposes only and may contain estimates. They shall not be used to develop permit requirements or other operating restrictions. Sunoco may change any projections, plans, or information included in the Control Plan or updates.

32. Beginning no later than 180 days after installing Qualifying Controls on and commencing operation of a heater and boiler that will be used to satisfy the requirements of Paragraph 27, Sunoco shall monitor the heaters or boilers as follows:

a. For heaters and boilers with a maximum heat input capacity of 150 mmBTU/hr (HHV) or greater, install or continue to operate a NO_x CEMS;

b. For heaters and boilers with a maximum heat input capacity of less than 150 mmBTU/hr (HHV), but greater than or equal to 100 mmBTU/hr (HHV), install or continue to operate a NO_x CEMS, or monitor NO_x emissions with a PEMS developed and operated pursuant to the requirements of Appendix C ("Predictive Emissions Monitoring Systems Requirements") of this Consent Decree;

c. For heaters and boilers with a maximum heat input capacity of less than 100 mmBTU/hr (HHV), but greater than or equal to 40 mmBTU/hr (HHV), conduct an initial performance test for NO_x.

Sunoco shall use Method 7E, an EPA-approved, or an Appropriate Plaintiff/Intervenor-approved alternate test method to conduct initial performance testing for NO_x emissions required by Paragraph 32.c. Monitoring with a PEMS that is required by this Paragraph shall be conducted in accordance with the requirements of Appendix C.

CEMS required under this Paragraph shall be operated and data recorded pursuant to applicable law. Units with Qualifying Controls installed before Date of Entry that are subject to this Paragraph shall comply with this Paragraph by three (3) years from Date of Entry.

33. Beginning no later than 180 days after installing Qualifying Controls and commencing operation of a heater or boiler that will be monitored by use of a NO_x CEMS that is required by Paragraph 32, Sunoco shall install, certify, calibrate, maintain, and operate all CEMS in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to COMS) 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, sections 5.1.1, 5.1.3, and 5.1.4, Sunoco must conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") on each CEMS at least once every three (3) years. Sunoco must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed. Nothing in this Paragraph shall affect any more stringent State or Local monitoring requirements.

34. The requirements of this Section V.F do not exempt Sunoco from complying with any and all Federal, state, or local requirements that may require technology upgrades based on actions or activities occurring after the Date of Lodging of this Consent Decree.

35. Sunoco shall retain all records required to support the reporting requirements under this Part until the termination of the Consent Decree, unless other regulations require the records to be maintained longer.

G. <u>SO_2 Emissions Reductions from and NSPS Applicability for Heaters and Boilers</u>.

36. By no later than Date of Entry, all heaters and boilers at Sunoco's Toledo and Philadelphia Refineries shall become affected facilities subject to the requirements of NSPS Subpart J for fuel gas combustion devices, except where an alternate schedule for NSPS Subpart J compliance is set forth in Appendix D ("NSPS Subpart J Compliance Schedule for Heaters and Boilers").

37. No later than Date of Entry, except for those heaters and boilers for which a phaseout schedule is provided at Appendix E ("Fuel Oil Combustion Phaseout Schedule for Heaters and Boilers"), Sunoco shall not burn Fuel Oil in any combustion unit at its Refineries except that:

a. Sunoco may burn Fuel Oil at these Refineries during periods of Natural Gas Curtailment, Test Runs, and operator training.

b. Sunoco may burn acid soluble oil (including cutter and line flush material) at the Philadelphia Refinery.

c. Sunoco may burn Torch Oil in FCCU regenerators to assist in starting, restarting, hot standby, or to maintain regenerator heat balance.

d. Sunoco may burn Fuel Oil in any CO boiler that is equipped with a WGS.

38. For Sunoco's Heaters and Boilers identified above that are or become affected facilities under NSPS Subpart J pursuant to Section V.G of this Consent

Decree, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8.

H. Sulfur Reductions at the Tulsa Refinery.

39. By eight (8) years from Date of Entry or by 12.31.13, whichever is earlier, Sunoco shall ensure that, (a) prior to combustion, the gas in the Tulsa Refinery's refinery fuel gas loop meets the H_2S limit set forth in 40 C.F.R. §60.104(a); and (b) at least 95% of the sulfur removed from the fuel gas is recovered.

I. Sulfur Recovery Plants - NSPS Applicability.

40. **Description of Sulfur Recovery Plants**. Sunoco owns and operates Claus Sulfur Recovery Plants ("SRPs") at the Marcus Hook, Philadelphia, and Toledo refineries.

a. Marcus Hook SRP: The SRP at the Marcus Hook Refinery ("Marcus Hook SRP") consists of two Claus trains. Each Claus train has its own SCOT Tail Gas Unit ("TGU") that serves as that train's control device.

b. Philadelphia SRP: The SRP at the Philadelphia Refinery ("Philadelphia SRP") consists of two Claus trains, 867N and 867S. There is one SCOT TGU and a backup TGU that serve as the control devices for the two Claus trains.

c. Toledo SRP: The SRP at the Toledo Refinery ("Toledo SRP") consists of one Claus train.

41. **Claus Sulfur Recovery Plant NSPS Applicability**. Effective on Date of Entry of the Consent Decree, each SRP at the Marcus Hook, Philadelphia, and Toledo Refineries shall be an "affected facility" under NSPS, 40 C.F.R. Part 60, Subparts A and

J. The parties agree that Paragraphs 43 and 44 set forth a compliance plan and interim compliance requirements for the Toledo SRP to comply with Subpart J. If, during the interim period, Sunoco complies with the requirements in Paragraphs 43 and 44, the United States and Ohio EPA will consider the Toledo SRP to be in compliance with this Paragraph 41.

42. **NSPS Compliance at Marcus Hook and Philadelphia SRPs**. By no later than the effective date of NSPS applicability for the Marcus Hook and Philadelphia SRPs, Sunoco shall, for those SRPs, comply with all applicable provisions of NSPS set forth at 40 C.F.R. Part 60, Subparts A and J, including, but not limited to, the following:

a. Emission limit. Sunoco shall, for all periods of operation of the Marcus Hook and Philadelphia SRPs, comply with 40 C.F.R. § 60.104(a)(2) at each SRP except during periods of Startup, Shutdown or Malfunction of the respective SRP, or during a Malfunction of a TGU serving as a control device for the SRP. For the purpose of determining compliance with the Sulfur Recovery Plant emission limits of 40 C.F.R. § 60.104(a)(2), the "Start-up/Shutdown" exemptions set forth in NSPS Subpart A shall apply to each SRP and not to the independent start-up or shutdown of a TGU serving as a control device for the SRP. However, the Malfunction exemption set forth in NSPS Subpart A shall apply to each SRP and to the TGU serving as the control device for the SRP.

b. Monitoring. Sunoco shall monitor all emissions points (stacks) to the atmosphere for tail gas emissions and shall monitor and report excess emissions from each of these SRPs, as required by 40 C.F.R. §§ 60.7(c), 60.13, and 60.105(a)(5), (6) or (7). During the life of this Consent Decree, Sunoco shall conduct emissions monitoring

from these SRPs with CEMS at all of the emission points, unless an SO_2 alternative monitoring procedure has been approved by EPA, per 40 C.F.R. § 60.13(i), for any of the emission points. This requirement for continuous monitoring of the SRP emission points is not applicable to the Acid Gas Flaring Devices that could be used to flare Acid Gas or Sour Water Stripper Gas diverted from the SRPs.

43. **NSPS Compliance at Toledo SRP**.

a. By no later than December 31, 2009, Sunoco shall install at the Toledo SRP a second Claus train and two TGUs to control the emissions from the Toledo SRP. By no later than eighteen (18) months after Date of Entry, Sunoco shall submit to EPA a compliance plan and schedule for the completion of installation of the new Toledo Claus train and TGUs. By December 31, 2009, Sunoco shall demonstrate compliance with NSPS Subpart A and J SRP requirements at the Toledo Refinery.

b. Sunoco shall also implement the following interim measures at the Toledo SRP:

i. Sunoco shall continue to maintain and operate an SO_2 CEMS for monitoring the emissions from the Toledo SRP in accordance with 40 C.F.R. Part 60, Subpart A, § 60.13 and shall comply during the interim period with the specific monitoring and reporting provisions established in 43.b.iii below.

ii. By no later than 180 days after Date of Entry, Sunoco shall complete an optimization study to minimize emissions and to maximize sulfur recovery efficiencies at the Toledo SRP and shall submit a copy of that study to EPA. This study shall meet all of the requirements set forth in Paragraph

44. Sunoco shall implement the recommendations of the study that could reasonably optimize the performance of the Toledo SRP by no later than twelve (12) months from Date of Entry.

iii. By no later than twelve (12) months from Date of Entry, Sunoco shall submit a report to EPA that proposes an appropriate interim performance standard (a range of percent recovery or other performance standard), appropriate monitoring and reporting requirements for the proposed interim performance standard and, if necessary, a schedule for implementing additional optimization study recommendations that would ensure that the SRP comply with Sunoco's proposed standard. Beginning with the date of such submission, Sunoco shall comply with its proposed interim performance standard and, if necessary, implement its proposed schedule for additional optimization study recommendations.

iv. If EPA determines, based on the results of the study and other available and relevant information, that a more stringent interim performance standard and/or a different implementation schedule is appropriate and can be achieved with a reasonable certainty of compliance, after an opportunity for consultation with Ohio EPA, EPA shall so notify Sunoco. Unless Sunoco disputes EPA's determination(s) within 90 days of its receipt of that notice, it shall comply with such new standard within 90 days or, if necessary, such other period as may be established by EPA consistent with any implementation schedule for additional optimization study recommendations proposed by Sunoco. Sunoco shall continue to

comply with the appropriate interim performance standard until such time as Sunoco completes installation of the TGUs in accord with the schedule under Paragraph 43.a and operates the Toledo SRP in compliance with NSPS Subpart J.

44. **Optimization**. The optimization study required for the Toledo SRP shall meet the following requirements:

a. A detailed evaluation of the Claus plant design and capacity, of the operating parameters and of the conversion and recovery efficiencies across the reaction furnace, waste heat boiler and each catalytic converter – including assessment of catalytic activity and determinations of material balances;

b. An analysis of the composition and variability of the acid gas and sour water stripper gas resulting from the processing of the crude slate actually used, or expected to be used, in those Claus train(s);

c. A review of each critical piece of process equipment and instrumentation within the Claus train to correct problems that have prevented the Claus train from achieving its optimal sulfur recovery efficiency;

d. Establishment of baseline data through testing and measurement of key parameters throughout the Claus train;

e. Establishment of a thermodynamic process model of the Claus train;

f. For any key parameters that have been determined to be at less than optimal levels, initiation of logical, sequential, or stepwise changes designed to move such parameters toward their optimal values;

g. Verification through testing, analysis of continuous emission monitoring data or other means, of incremental and cumulative improvements in sulfur recovery efficiency, if any;

h. Establishment of new operating procedures for long-term efficient operation; and

i. The study shall be conducted to optimize the performance of the Claus train in light of the actual characteristics of the feeds to the train.

45. **Sulfur Pit Emissions**. Sunoco shall continue to route or will re-route all sulfur pit emissions at all Sunoco Refineries so that they are eliminated, controlled, or included and monitored as part of the SRP's emissions subject to the NSPS Subpart J limit for SO_2, 40 C.F.R. § 60.104(a)(2), by no later than the first turnaround of the applicable Claus train that occurs on or after one year from Date of Entry or by December 31, 2008 (whichever first occurs).

46. For Sunoco's SRPs that become affected facilities under NSPS Subpart J pursuant to Section V.I. of this Consent Decree, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7 (a) and the initial performance test requirement of 40 C.F.R. § 60.8.

47. **Good Operation and Maintenance**.

a. By no later than 180 days from Date of Entry, Sunoco shall submit to EPA and the Appropriate Plaintiff/Intervenor a summary of the plans, implemented or to be implemented, at the Marcus Hook, Philadelphia, and Toledo Refineries for enhanced maintenance and operation of their SRPs, and TGUs, including any supplemental control devices, and the appropriate Upstream Process Units. This plan shall be termed a Preventive Maintenance and Operation Plan ("PMO Plan"). The PMO Plan shall be a compilation of Sunoco's approaches for exercising good air pollution control practices and for minimizing SO_2 emissions at each of these Refineries. PMO Plans shall have as their goals the elimination of Acid Gas Flaring and the continuous operation of the SRPs, between Scheduled Maintenance turnarounds, with a minimization of emissions. The PMO Plan shall include, but not be limited to, sulfur shedding procedures, startup and shutdown procedures, emergency procedures and schedules to coordinate maintenance turnarounds of the SRP Claus trains and associated TGUs to coincide, if necessary to minimize emissions, with scheduled turnarounds of major Upstream Process Units. Sunoco shall operate consistent with the PMO Plans at all times, including periods of Startup, Shutdown and Malfunction of its SRPs. Changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO_2 emissions shall be summarized and reported by Sunoco to EPA and the Appropriate Plaintiff/Intervenor on an annual basis.

b. EPA and the Appropriate Plaintiff/Intervenors 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 Sunoco 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 the review by EPA or any state agency of a PMO Plan, Sunoco shall remain solely responsible for compliance with the Clean Air Act and such other laws and regulations.

J. <u>Hydrocarbon Flaring Devices</u>.

48. **<u>NSPS Applicability of Hydrocarbon Flaring Devices</u>**: Sunoco owns and operates the Hydrocarbon Flaring Devices identified in Appendix F ("List of Flaring Devices") to this Consent Decree. By no later than the dates identified in Appendix G ("NSPS Subpart J Compliance Schedule for Flares"), Sunoco agrees that the HC Flaring Devices listed in Appendix G are "affected facilities" (as that term is used in NSPS, 40 C.F.R. Part 60) subject to, and required to comply with, the requirements of 40 C.F.R. Part 60, Subparts A and J, for fuel gas combustion devices used as emergency control devices for quick and safe release of combustible gases.

a. Sunoco shall meet the NSPS Subparts A and J requirements for each NSPS HC Flaring Device by using one or any combination of the following methods:

i. Operating and maintaining a flare gas recovery system to prevent continuous or routine combustion in the NSPS HC Flaring Device. Use of a flare gas recovery system on a flare obviates the need to continuously monitor emissions as otherwise required by 40 C.F.R. § 60.105(a)(4);

ii. Eliminating the routes of continuous or intermittent, routinely-generated refinery fuel gases to an NSPS HC Flaring Device and operating the Flaring Device such that it only receives non-routinely generated gases, process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions; or

iii. Operating the NSPS HC Flaring Device as a fuel gas combustion device, monitoring it for the continuous or intermittent, routinely-generated refinery fuel gases streams put into the flare header, with (A) a CEMS as required by 40 C.F.R. § 60.105(a)(4); or (B) a parametric monitoring system approved by EPA under 40 C.F.R. § 60.13(i); or (C) an alternative monitoring system containing the components outlined in Appendix H ("Alternative Monitoring Protocol for Flares") to this Consent Decree and approved by EPA under 40 C.F.R. § 60.13(i).

Sunoco shall identify the options that were implemented for each NSPS Hydrocarbon Flaring Device in the first Report due under Paragraph 114 after such compliance is achieved.

b. The Parties recognize that periodic maintenance may be required for properly designed and operated flare gas recovery systems. Sunoco shall take all reasonable measures to minimize emissions while such periodic maintenance on a flare gas recovery system is being performed. The Parties also recognize that under certain conditions, a flare gas recovery system may need to be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes. Nothing in this Consent Decree precludes Sunoco from temporarily bypassing a flare gas recovery system under such conditions.

c. Within 90 days after bringing an NSPS Hydrocarbon Flaring Device into compliance with NSPS Subparts A and J, in accord with the provisions in Paragraph 48.a. and with the schedule in Appendix G, Sunoco shall conduct a flare performance test pursuant to 40 C.F.R. §§ 60.8 and 60.18, or an EPA-approved equivalent method. In lieu

of conducting the velocity test required in 40 C.F.R. § 60.18, Sunoco may submit velocity calculations which demonstrate that the NSPS Hydrocarbon Flaring Device meets the performance specification required by 40 C.F.R. § 60.18. For Sunoco's Flaring Devices identified above that are or become affected facilities under NSPS Subpart J pursuant to Section V.J. of this Consent Decree, entry of this Consent Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8.

49. **Good Air Pollution Control Practices**. On and after Date of Entry, Sunoco shall at all times and to the extent practicable, including during periods of Startup, Shutdown, upset and/or Malfunction of refinery process units, implement good air pollution control practices to minimize emissions from its Hydrocarbon Flaring Devices consistent with 40 C.F.R. § 60.11(d). Sunoco shall implement such good air pollution control practices to minimize Hydrocarbon Flaring Incidents by investigating, reporting and correcting all Hydrocarbon Flaring Incidents in accordance with the procedures in Paragraph 64.

50. **Compliance with the Emission Limit at 40 C.F.R. § 60.104(a)(1)**.

a. Continuous or Intermittent, Routinely-Generated Refinery Fuel Gases. For continuous or intermittent, routinely-generated refinery gases that are combusted in any of the NSPS Hydrocarbon Flaring Devices, Sunoco shall comply with the emission limit at 40 C.F.R. § 60.104(a)(1) by the dates specified in Appendix G.

b. Non-Routinely Generated Gases. The combustion of gases generated by the Startup, Shutdown, or Malfunction of a refinery process unit or released to an NSPS

Flaring Device as a result of relief valve leakage or other emergency Malfunction are exempt from the requirement to comply with 40 C.F.R. § 60.104(a)(1).

K. Control of Acid Gas Flaring and Tail Gas Incidents.

51. **Flaring History**. Sunoco has provided to EPA a report identifying AG Flaring Incidents that occurred in recent years, their probable causes and estimated emissions, and the corrective measures taken by Sunoco to avoid future AG Flaring Incidents.

52. **Future Acid Gas Flaring and Tail Gas Incidents**. Sunoco shall investigate the cause of future Acid Gas Flaring and Tail Gas Incidents, take reasonable steps to correct the conditions that have caused or contributed to such Acid Gas Flaring and Tail Gas Incidents, and minimize Acid Gas Flaring and Tail Gas Incidents at the Marcus Hook, Philadelphia, and Toledo Refineries. Sunoco shall follow the procedures in this Section V.K. to evaluate whether Acid Gas/Sour Water Stripper Gas Flaring Incidents occurring after Date of Entry are due to Malfunctions or are subject to stipulated penalties. The investigative and evaluative procedures in this Section V.K. will also be used to assess whether Tail Gas Incidents, as described in Paragraph 63, are due to Malfunctions or are subject to stipulated penalties.

53. **Investigation and Reporting**. No later than 45 days following the end of an Acid Gas Flaring Incident occurring after Date of Entry, Sunoco shall submit to EPA and the Appropriate Plaintiff/Intervenor a report that sets forth the following:

a. The date and time that the Acid Gas Flaring Incident started and ended. To the extent that the Acid Gas Flaring Incident involved multiple releases either within a

24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, Sunoco shall set forth the starting and ending dates and times of each release;

b. An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

c. The steps, if any, that Sunoco took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring Incident;

d. A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident, to the extent determinable;

e. An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If two or more reasonable alternatives exist to address the Root Cause, the analysis shall discuss the alternatives that are 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, operation and maintenance changes shall be evaluated. If Sunoco concludes that corrective action(s) is (are) required under this Paragraph 53 the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If Sunoco concludes that corrective action is not required under this Paragraph 53, the report shall explain the basis for that conclusion;

f. A statement that: (a) specifically identifies each of the grounds for stipulated penalties in Paragraphs 56 and 57 of this Decree and describes whether or not the Acid Gas Flaring Incident falls under any of those grounds; (b) if an Acid Gas Flaring

Incident falls under Paragraph 57 of this Decree, describes which Paragraph 57.a or 57.b applies and why; and (c) if an Acid Gas Flaring Incident falls under either Paragraph 56 or 57.b, states whether or not Sunoco asserts a defense to the Flaring Incident, and if so, a description of the defense;

g. 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 Paragraphs 53.d and 53.e shall be submitted; provided, however, that if Sunoco has not submitted a report or a series of reports containing the information required to be submitted under this Paragraph within the 45-day time period set forth in this Paragraph (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of Section XI shall apply, but Sunoco shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Sunoco's failure to submit the report required under this Paragraph within the time frame set forth. Nothing in this Paragraph shall be deemed to excuse Sunoco from its investigation, reporting, and corrective action obligations under this Section for any Acid Gas Flaring Incident which occurs after an Acid Gas Flaring Incident for which Sunoco has requested an extension of time under this Paragraph; and

h. 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, then, by no later than 30 days after completion of the implementation of

corrective action(s), Sunoco shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

54. **Corrective Action**.

a. In response to any AG Flaring Incident occurring after Date of Entry, Sunoco shall take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all significant contributing causes of that AG Flaring Incident.

b. If EPA does not notify Sunoco in writing within 45 days of receipt of the report(s) required by Paragraph 53 that it objects to one or more aspects of the proposed corrective action(s) 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 54.a of this Decree. EPA does not, however, by its failure to object to any corrective action that Sunoco may take in the future, warrant or aver in any manner that any corrective actions in the future shall result in compliance with the provisions of the Clean Air Act or its implementing regulations.

c. If EPA objects, in whole or in part, to the proposed corrective action(s) and/or the schedule(s) of implementation or, where applicable, to the absence of such proposal(s) and/or schedule(s), it shall notify Sunoco and explain the basis for its objection (s) in writing within 45 days following receipt of the report(s) required by Paragraph 53, above. Sunoco shall respond within 45 days to EPA's objection(s).

d. Nothing in this Section V.K shall be construed to limit the right of Sunoco to take such corrective actions as it deems necessary and appropriate immediately

following an Acid Gas Flaring Incident or in the period during preparation and review of any reports required under this Paragraph.

55. **Stipulated Penalties for Acid Gas Flaring Incidents**: The provisions of Paragraphs 56 through 58 are to be used by EPA in assessing stipulated penalties for AG Flaring Incidents occurring after Date of Entry of this Consent Decree and by the United States in demanding stipulated penalties under this Section V.K. The logic diagram attached hereto as Appendix I ("Logic Diagram for Paragraphs 56-58") to this Consent Decree is intended to describe the process outlined in Paragraphs 56-58. Paragraphs 56-58 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 I, the language of those Paragraphs shall control. The provisions of Paragraphs 56-58 do not apply to HC Flaring Incidents.

56. The stipulated penalty provisions of Paragraph 152 shall apply to any Acid Gas Flaring Incident for which the Root Cause was one or more or 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 equipment that is due to a failure by Sunoco to operate and maintain that equipment in a manner consistent with good engineering practice;

d. Shutdown of the Toledo SRP that is due to lack of amine directed to the regenerator; or,

e. Shutdown of the Toledo SRP caused by failure of the 600 volt substation at No. 1 substation due to a failure by Sunoco to operate and maintain the substation in a manner consistent with good engineering practices.

57. If the Acid Gas Flaring Incident is not a result of one of the Root Causes identified in Paragraph 56, then the stipulated penalty provisions of Paragraph 152 shall apply if the Acid Gas 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 Sunoco failed to act consistent with its PMO Plan and/or to take any action during the Acid Gas Flaring Incident to limit the duration and/or quantity of SO_2 emissions associated with such incident; or

b. Causes the total number of Acid Gas Flaring Incidents in a rolling twelve (12) month period to exceed five (5) per Refinery.

58. With respect to any Acid Gas Flaring Incident not identified in Paragraphs 56 or 57, the following provisions shall apply:

a. First Time: If the Root Cause of the Acid Gas Flaring Incident was not a recurrence of the same Root Cause that resulted in a previous Acid Gas Flaring Incident that occurred since Date of Entry, then:

i. If the Root Cause of the Acid Gas Flaring 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 Acid Gas Flaring Incidents;

ii. If the Root Cause of the Acid Gas Flaring Incident was sudden and infrequent, and was reasonably preventable through the exercise of good engineering practice, then Sunoco shall implement corrective action(s) pursuant to Paragraph 54, and the stipulated penalty provisions of Section XI shall not apply.

b. Recurrence: If the Root Cause is a recurrence of the same Root Cause that resulted in a previous Acid Gas Flaring Incident that occurred since Date of Entry, then Sunoco shall be liable for stipulated penalties under Section XI unless:

i. the Flaring Incident resulted from a Malfunction; or

ii. the Root Cause previously was designated as an agreed-upon malfunction under Paragraph 58.a.(i); or

iii. the AG Flaring Incident had as its Root Cause the recurrence of a Root Cause for which Sunoco had previously developed, or was in the process of developing, a corrective action plan and for which Sunoco had not yet completed implementation.

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

a. *Force majeure* under Section XIV of this Consent Decree.

b. As to Paragraph 56, the Acid Gas Flaring Incident does not meet the identified criteria.

c. As to Paragraph 57, the Acid Gas Flaring Incident does not meet the identified criteria and/or was due to a Malfunction.

d. As to Paragraph 58, the Acid Gas Flaring Incident does not meet the identified criteria, was due to a Malfunction and/or Sunoco was in the process of timely developing or implementing a corrective action plan under Paragraph 54 for the previous Acid Gas Flaring Incident.

60. In the event a dispute under Paragraphs 57 or 58 is brought to the Court pursuant to the Dispute Resolution provisions of this Consent Decree, Sunoco 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 Sunoco prevails in persuading the Court that the defenses of Startup, Shutdown and/or upset are available for AG Flaring Incidents under 40 C.F.R. 60.104(a)(1), Sunoco 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, Sunoco shall be liable for such stipulated penalties.

61. Other than for a Malfunction or *force majeure*, if no Acid Gas Flaring Incident occurs at either the Marcus Hook, Philadelphia, or Toledo Refinery for a rolling 36 month period, then the stipulated penalty provisions of Section XI for such flaring shall no longer apply to that Refinery. EPA may elect to prospectively reinstate the stipulated penalty provision for such flaring if such Refinery has a subsequent Acid Gas Flaring Incident which would otherwise be subject to stipulated penalties. EPA's decision shall not be subject to dispute resolution. Once EPA provides Sunoco with notice of reinstatement, the stipulated penalty provision shall continue for the remaining life of this Consent Decree for that Refinery.

62. **Emission Calculations**.

a. Calculation of the Quantity of Sulfur Dioxide Emissions Resulting from AG Flaring. For purposes of this Consent Decree, the quantity of SO_2 emissions resulting from AG Flaring Incident shall be calculated by the following formula:

$$\text{Tons of } SO_2 = [FR][TD][Conc H_2S][8.44 \times 10^{-5}].$$

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 less than 10.050 shall be rounded to 10.0.) 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 24-hour period starting when the Acid Gas was first flared.

b. Calculation of the Rate of SO_2 Emissions During AG Flaring. For purposes of this Consent Decree, the rate of SO_2 emissions resulting from AG Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

$$ER = [FR][Conc H_2S][0.169].$$

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 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 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

c. Meaning of Variables and Derivation of Multipliers Used in the Equations in this Paragraph 62:

ER =	Emission Rate in pounds of SO_2 per hour
FR =	Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour
TD =	Total Duration of Flaring Incident in hours
ConcH_2S =	Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)
8.44×10^{-5} =	[lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]
0.169 =	[lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the AG Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA or the Appropriate Plaintiff/Intervenors. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment. The report required under Paragraph 53 shall include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

63. **Tail Gas Incidents**.

a. Investigation, Reporting, Corrective Action and Stipulated Penalties. For Tail Gas Incidents, Sunoco shall follow the same investigative, reporting, corrective action and assessment of stipulated penalty procedures as those set forth in Paragraphs 52 through 61 for Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a TGU, or other events which result in a Tail Gas Incident, including unscheduled shutdowns of a Claus Sulfur Recovery Plant. Notwithstanding the foregoing, stipulated penalties shall not apply to emissions resulting from the scheduled Start-up or Shutdown of a Sulfur Recovery Plant. This Paragraph 63 shall apply at Marcus Hook and Philadelphia Refineries on and after Date of Entry of this Consent Decree. At the Toledo Refinery this Paragraph 63 shall apply at such time as Sunoco completes installation of the TGU(s) in accord with the schedule under Paragraph 43.a and operates the Toledo SRP in compliance with NSPS Subpart J.

b. Calculation of the Quantity of SO_2 Emissions Resulting from a Tail Gas Incident. For the purposes of this Consent Decree, the quantity of SO_2 emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods, based on the type of event:

i. If Tail Gas is combusted in a flare, the SO_2 emissions are calculated using the methods outlined in Paragraph 62; or

ii. If Tail Gas exceeding the 250 ppmvd (NSPS J limit) is emitted from a monitored SRP incinerator, then the following formula applies:

$$ER_{TGI} = \sum_{i=1}^{TD_{TGI}} [\,FR_{Inc.}]_i\,[\text{Conc. } SO_2 - 250]_i\,[0.169 \times 10^{-6}]\,[(20.9 - \%\,O_2)/20.9]_i$$

Where:

ER_{TGI} = Emissions in excess of the 250 ppm limit from the Tail Gas Unit at the SRP incinerator, pounds of SO_2 over a 24-hour period

TD_{TGI} = Hours when the incinerator CEM was exceeding 250 ppmvd SO_2 on a rolling twelve hour average, corrected to 0% O2, in each 24-hour period of the Incident

i = Each hour within TD_{TGI}

$FR_{Inc.}$ = 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 = The average SO_2 concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O_2, for each hour of the Incident

% O_2 = O_2 concentration (CEMS data) in the incinerator exhaust gas in volume % on dry basis for each hour of the Incident

0.169×10^{-6} = [lb mole of SO_2 / 379 SO_2] [64 lbs SO_2 / lb mole SO_2] [1×10^{-6}]

Standard conditions = 60 degree F; 14.7 lb_{force}/sq.in. absolute

In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for FR_{Inc}, does not exist or is inoperable, then Sunoco shall estimate emissions based on best engineering judgment.

L. <u>Control of Hydrocarbon Flaring Incidents</u>.

64. For Hydrocarbon Flaring Incidents occurring after Date of Entry, Sunoco shall follow the same investigative, reporting, and corrective action procedures as those set forth in Section V.K. for Acid Gas Flaring Incidents; provided however, that in lieu of identifying possible corrective actions under Paragraph 53.e and taking interim and/or long-term corrective action under Paragraph 54 for a Hydrocarbon Flaring Incident with a Root Cause attributable to the Startup or Shutdown of a unit that Sunoco has

previously analyzed under this Paragraph, Sunoco may identify such prior analysis when submitting the report required under this Paragraph. Sunoco shall submit the Hydrocarbon Flaring Incident(s) reports as part of the Semi-annual Progress Reports required pursuant to Section IX. Stipulated penalties under Paragraphs 56 - 58 and Section XI shall not apply to Hydrocarbon Flaring Incident(s). The formulas at Paragraph 62, used for calculating the quantity and rate of sulfur dioxide emissions during AG Flaring Incidents, shall be used to calculate the quantity and rate of sulfur dioxide emissions during HC Flaring Incidents.

M. <u>Benzene Waste NESHAP Program Enhancements.</u>

In addition to continuing to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF (the "Benzene Waste Operations NESHAP," "BWON," or "Subpart FF"), Sunoco agrees to undertake, at each Covered Refinery, the measures set forth in this Section to ensure enhanced compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions. For purposes of this Section ("Benzene Waste NESHAP Program Enhancements"), "Covered Refinery" means (i) the Marcus Hook Refinery; (ii) the Philadelphia Refinery; and (iii) the Toledo Refinery. The Tulsa Refinery is not a Covered Refinery unless and until it has a Total Annual Benzene ("TAB") equal to or greater than 10 Mg/yr, at which point it will become a Covered Refinery.

65. **<u>Current Compliance Status.</u>**

a. As of Date of Entry of the Consent Decree, at each Covered Refinery, Sunoco shall comply with the compliance option set forth at 40 C.F.R. § 61.342(c), utilizing the exemptions set forth in 40 C.F.R. §§ 61.342(c)(2) and (c)(3)(ii) (hereinafter

referred to as the "2 Mg Compliance Option").

b. As of Sunoco's most recent TAB submittal date, Sunoco reported that it had a TAB of less than 10 Mg/yr at its Tulsa Refinery; accordingly, the Tulsa Refinery is not a Covered Refinery.

66. **Refinery Compliance Status Changes**.

Commencing on Date of Entry of the Consent Decree and continuing through the Date of Termination, to the extent applicable, Sunoco shall not change the compliance status of any Covered Refinery from the 6 BQ Compliance Option to the 2 Mg Compliance Option. If at any time after Date of Entry of the Consent Decree, the Tulsa Refinery is determined to have a TAB equal to or greater than 10 Mg/yr, Sunoco shall not utilize the 2 Mg Compliance Option. Sunoco shall consult with the EPA, the appropriate EPA Region, and the appropriate state agency ("Relevant Government Agencies") before making any change in compliance strategy not expressly prohibited by this Paragraph. All changes must be undertaken in accordance with Subpart FF.

67. **Review and Verification of Each Covered Refinery and Tulsa's TAB and Compliance Status**.

a. Phase One of the Review and Verification Process. By no later than 240 days after Date of Entry of the Consent Decree, Sunoco shall complete a review and verification of the TAB and the BWON compliance status of two of the four Refineries, and shall complete a review of each Covered Refinery and Tulsa within 365 days. For each Covered Refinery and Tulsa, the review and verification process shall include, but shall not be limited to:

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

ii. 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;

iii. An identification of the benzene concentration in each waste stream, including sampling for benzene concentration at no less than ten (10) waste streams per refinery consistent with the requirements of 40 C.F.R. §§ 61.355(c)(1) and (3); provided, however, that previous analytical data or documented knowledge of waste streams may be used, as per 40 C.F.R. § 61.355(c)(2), for streams not sampled; and

iv. An indication whether or not the stream is controlled consistent with the requirements of Subpart FF.

By no later than 30 days following the completion of Phase One of the review and verification process, Sunoco shall submit to EPA a BWON Compliance Review and Verification Report ("Phase One BWON Compliance Review and Verification Report") that sets forth the results of Phase One, including the items identified in subparagraphs 67.a.i-iv. Sunoco shall submit one Phase One BWON Compliance Review and Verification Report for each Covered Refinery and for the Tulsa Refinery.

b. Phase Two of the Review and Verification Process. Based on EPA's review of the Phase One BWON Compliance Review and Verification Reports, no later than 45 days from the submittal of the Phase One BWON Compliance Review and Verification Report EPA may select up to twenty (20) additional waste streams at each Covered Refinery for sampling for benzene concentration. As long as waste is being or is scheduled to be generated at the waste steams identified by EPA within 30 days of the request, Sunoco shall conduct the required sampling and submit the results to EPA within 90 days of receipt of EPA's additional sampling request. Sunoco shall use the results of this additional sampling to recalculate the TAB, to re-assess the Covered Refinery's BWON compliance status, and to amend the Phase One BWON Compliance Review and Verification Reports to create a Phase Two BWON Compliance Review and Verification Report, as needed. To the extent that EPA requires Sunoco to re-sample a Phase One waste stream that was sampled as part of this Phase Two review, Sunoco may average the results of the two sampling events. Sunoco shall submit the Phase Two BWON Compliance Review and Verification Report no later than 150 days after receipt of EPA's request for Phase Two sampling, if Phase Two sampling is required by EPA.

c. Amended TAB Reports. Sunoco shall submit, by no later than 60 days after submission of the later of the Phase One or Phase Two BWON Compliance Review and Verification Report(s), an amended TAB report to the Relevant Government Agencies.

68. **Implementation of Actions Necessary to Correct Noncompliance**.

a. BWON Corrective Action Plans

i. Covered Refinery. If the results of the later of the Phase One or Phase Two BWON Compliance Review and Verification Report indicate that Sunoco is not in compliance with the 2 Mg Compliance Option at a Covered Refinery, then, for each such Covered Refinery not in compliance, Sunoco shall submit to EPA, by no later than 90 days after completion of the later of the Phase One or Phase Two BWON Compliance Review and Verification Report, a BWON Corrective Action Plan that identifies with specificity the compliance strategy and schedule that Sunoco shall implement to ensure that the Covered Refinery complies with the 2 Mg Compliance Option as soon as practicable, but no later than 180 days after submission of the BWON Corrective Action Plan.

ii. Tulsa Refinery. If the results of the Phase One or Phase Two BWON Compliance Review and Verification Report indicate that the Tulsa Refinery has a TAB equal to or greater than 10 Mg/yr, Sunoco shall submit to the Relevant Government Agencies, by no later than 180 days after completion of the Phase One or Phase Two BWON Compliance Review and Verification Report, a BWON Corrective Action Plan that identifies with specificity the compliance strategy and schedule that Sunoco shall implement to ensure that the Tulsa Refinery either reduces its TAB to less than 10 Mg/yr or complies with the 6 BQ Compliance

Option as soon as practicable, but no later than 365 days after submission of the BWON Corrective Action Plan.

iii. Plan Implementation. Sunoco shall implement any EPA-approved BWON Corrective Action Plan under this Paragraph 68 in accordance with the schedule included in the approved Plan.

b. Certification of Compliance with the 2 Mg Compliance Option. By no later than 30 days after completion of the implementation of all actions, if any, required pursuant to Paragraphs 68 or 75.f to come into compliance with the applicable compliance option, Sunoco shall submit a report to the Relevant Government Agencies that, as to the subject Refinery, the Refinery complies with the Benzene Waste Operations NESHAP.

69. **Carbon Canisters**. Sunoco shall comply with the requirements of this Paragraph 69 at each Covered Refinery at all locations where any carbon canister system is used as a control device under Subpart FF.

a. Limitations on Use of Single Carbon Canister Systems

i. New Units or Installations. Except as expressly provided by subparagraphs iii and iv below, commencing on Date of Entry of the Consent Decree and continuing through the Date of Termination, Sunoco shall not use a single carbon canister system for any new unit or installation that requires control pursuant to Subpart FF at the Covered Refinery.

ii. Existing Units or Installations. Except as expressly provided by subparagraphs iii and iv below, commencing 270 days after Date of Entry

of the Consent Decree and continuing through the Date of Termination, Sunoco shall not use a single carbon canister system for any existing unit or installation that requires control pursuant to Subpart FF at the Covered Refinery.

iii. Temporary Applications. Sunoco may operate a properly-sized single canister system to control benzene emissions from a short-term operation, such as a temporary storage tank. For any canister operated as part of a single canister system, benzene "breakthrough" shall be defined for the purposes of the Consent Decree as any benzene reading above background as measured at the outlet of the canister. Sunoco shall monitor for breakthrough from a single carbon canister system at least once every 24 hours. Sunoco shall replace any single carbon canister with a fresh carbon canister immediately after a benzene reading above background is detected at the outlet of the canister, unless Sunoco chooses to discontinue flow to the carbon canister or route the stream to an alternative control device. For the purpose of this subparagraph, "immediately" shall mean within 24 hours.

iv. Permanent Applications. Sunoco may continue to operate a properly-sized single canister system on those applications that exist on the Date of Lodging of this Consent Decree where data over the past five (5) years demonstrate that breakthrough has not occurred in less than six (6) months. Sunoco shall monitor for "breakthrough" by monitoring for benzene on a bi-weekly basis at the outlet of the canister. "Breakthrough"

shall be defined for the purpose of this Consent Decree as any reading equal to or greater than one (1) ppm benzene. Sunoco shall replace any single carbon canister with a fresh carbon canister immediately after breakthrough is detected. For the purpose of this subparagraph, "immediately" shall mean within 24 hours.

b. Installation and Use of Dual Canisters Operated in Series. Except as provided in Paragraph 69.a.iii and a.iv, by no later than 270 days after Date of Entry of the Consent Decree, Sunoco shall add a secondary carbon canister to each single carbon canister system on an existing unit or installation to convert the single canister system to a dual carbon canister system with the dual canisters operated in series, and shall at each location utilize the dual canister system to control benzene emissions pursuant to Subpart FF. By no later than 30 days following completion of the installation of the dual canisters, for each Refinery, Sunoco shall submit a report certifying the completion of the installation. The report shall include a list of all locations within each Refinery where secondary carbon canisters were installed, the installation date of each secondary canister, and the date that each secondary canister was put into operation.

c. Breakthrough Monitoring With Dual Canisters. By no later seven (7) days after the installation of each secondary carbon canister, Sunoco shall start to monitor for breakthrough between the primary and secondary carbon canisters at times when there is actual flow to the carbon canister, in accordance with the frequency specified in 40 C.F.R. § 61.354(d). At each Covered Refinery, Sunoco shall monitor for "breakthrough" by monitoring for benzene. For a dual carbon canister system, "breakthrough" shall be defined for the purpose of this Consent Decree as any reading

equal to or greater than 5 ppm benzene measured between the primary and secondary canister. In lieu of replacing the primary canister immediately, Sunoco may elect to monitor the secondary canister the day breakthrough between the primary and secondary canister is identified and each calendar day thereafter. This daily monitoring shall continue until the primary canister is replaced. If either benzene or VOC is detected at the outlet of the secondary canister during this period of daily monitoring, the primary canister must be replaced within 24 hours. The original secondary carbon canister will become the new primary carbon canister and a fresh carbon canister will become the secondary canister.

d. Canister Replacement With Dual Canister System. Except as otherwise provided in Paragraph 69.c above, immediately when breakthrough is detected, Sunoco shall replace the original primary carbon canister with the secondary canister, and shall use a fresh canister as the new secondary canister. For the purpose of this Paragraph, "immediately" shall mean within 24 hours.

e. Sunoco shall maintain a supply of fresh carbon canisters at each Covered Refinery at all times.

f. Records for the requirements of this Paragraph 69 shall be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

70. **Annual Review**. By no later than 180 days from Date of Entry of the Consent Decree, Sunoco shall modify (or establish) its existing management of change procedures or shall develop and implement new written procedures to provide for performance of an annual review of process information for each Covered Refinery, including construction projects, to ensure that all new benzene waste streams are

included in the Covered Refinery's waste stream inventory. Sunoco shall conduct such reviews on an annual basis until the Date of Termination.

71. **Laboratory Audits**. Sunoco shall conduct audits of all laboratories that perform analyses of Sunoco's Benzene Waste Operations NESHAP samples to ensure that proper analytical and quality assurance/quality control procedures are followed. Sunoco may elect to submit the results from laboratory audits conducted by other refineries under the global consent decrees, provided the audits meet Sunoco's audit criteria.

a. Sunoco shall complete audits of at least half of the laboratories used by the Covered Refinery within 180 days after Date of Entry of the Consent Decree, and shall complete the remaining audits within 365 days after Date of Entry of the Consent Decree. In addition, Sunoco shall audit any new laboratory used for analyses of benzene samples prior to use of the new laboratory.

b. Until the Date of Termination, Sunoco shall conduct subsequent laboratory audits, such that each laboratory is audited every two (2) years.

72. **Benzene Spills**. For each spill at each Covered Refinery after Date of Entry of the Consent Decree, Sunoco shall review the spill to determine if benzene waste, as defined by Subpart FF, was generated. For each spill involving the release of more than 10 pounds of benzene in a 24-hour period, Sunoco: (i) shall include benzene waste generated by the spill in the relevant Covered Refinery's TAB, as required by 40 C.F.R. § 61.342; and (ii) shall account for such benzene waste in accordance with the applicable compliance option calculations, as appropriate under Subpart FF, unless the

benzene waste is properly managed in controlled waste management units at the Covered Refinery.

73. **Training**. By no later than 90 days from Date of Entry of the Consent Decree, Sunoco shall develop and begin implementation of annual (i.e., once each calendar year) training for all employees assigned to draw benzene waste samples at each Covered Refinery.

a. Covered Refinery. For each Covered Refinery, by no later than 180 days from Date of Entry of the Consent Decree, Sunoco shall complete the development of standard operating procedures for all control equipment used to comply with the Benzene Waste Operations NESHAP at the Covered Refinery. By no later than 180 days thereafter, Sunoco 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 the Date of Termination, "refresher" training in these procedures shall be performed on a three (3) year cycle.

b. Tulsa Refinery. If and when the Tulsa Refinery TAB equals or exceeds 10 Mg/yr, Sunoco shall implement operating procedures and training requirements at the Tulsa Refinery comparable to those required by Paragraph 73.a. By no later than 270 days thereafter, Sunoco shall complete an initial training program regarding these procedures for all operators assigned to this equipment. Sunoco shall propose a schedule for training at the same time that Sunoco proposes a plan, pursuant to Paragraphs 68.a.ii or 75.f that identifies the compliance strategy and schedule that Sunoco shall implement to come into compliance with the 6 BQ Compliance Option at the Tulsa Refinery.

c. As part of Sunoco's training program, Sunoco must require that the employees of any contractors hired to perform the requirements of this Section V.M are properly trained to implement all provisions of this Section at the relevant Refinery.

74. **Waste/Slop/Off-Spec Oil Management**.

a. No later than 60 days after Date of Entry, Sunoco shall submit to EPA, for each Covered Refinery and Tulsa, schematics that: (i) depict the waste management units (including sewers) that handle, store, and transfer waste/slop/off-spec oil streams; (ii) identify the control status of each waste management unit; and (iii) show how such oil is transferred within the Refinery. If requested by EPA, Sunoco shall submit to EPA, within 90 days of EPA's request, a set of revised schematics reflecting the characterization of oil streams and the appropriate control standards. These schematics will be used in preparing the end-of-line sampling plans.

b. Organic Benzene Waste Streams. For: (i) each Covered Refinery from Date of Entry of this Consent Decree; and (ii) the Tulsa Refinery, if and when that Refinery's TAB reaches 10 Mg/yr and a compliance strategy is approved, all waste management units handling "organic" benzene wastes, as defined in Subpart FF, shall meet the applicable control standards of Subpart FF. If controls not already in place are necessary on any waste management unit handling organic benzene wastes, Sunoco shall submit to EPA, within 90 days, a written plan and schedule, not to exceed 180 days from the date of EPA approval, for installation and operation of necessary controls. Sunoco shall complete the installation and commence operation of the necessary controls in accordance with the EPA-approved plan and schedule.

c. Aqueous Benzene Waste Streams. For purposes of complying with the 2Mg or 6BQ Compliance Option, 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 2 or 6 Mg limit.

75. **Sampling**.

a. BWON Sampling Plans: General

i. Requirement to Submit Plan. Sunoco shall submit to EPA for approval a separate BWON Sampling Plan designed to determine the benzene quantity in uncontrolled waste streams at each Covered Refinery and at the Tulsa Refinery. Each BWON Sampling Plan shall include the information required in Paragraph 75.b. Upon approval by EPA, Sunoco shall implement within the first full Calendar Quarter each EPA-approved BWON Sampling Plan. Delays in the approval of a BWON Sampling Plan for one Refinery shall not constitute grounds for delays in implementing an EPA-approved BWON Sampling Plan for another Refinery.

ii. Timing for Submittal. If, as to the Covered Refinery that is the subject of the proposed BWON Sampling Plan, EPA has not requested Phase Two sampling, then Sunoco shall submit to EPA a proposed BWON Sampling Plan for that Covered Refinery by no later than 60 days after the time for EPA to request Phase Two sampling has expired. If, as to the Covered Refinery that is the subject of the proposed BWON Sampling Plan, EPA has requested Phase Two sampling, then Sunoco shall submit to EPA a

proposed BWON Sampling Plan for that Covered Refinery by no later than 120 days after submitting its Phase Two BWON Compliance Review and Verification Report.

iii. Plan Revisions. If, before the Date of Termination, changes in processes, operations, or other factors lead Sunoco or EPA to conclude that the approved sampling locations, approved methods for determining flow calculations, and/or assumed volatilization rates no longer provide an accurate measure of a Covered Refinery's uncontrolled benzene quantity, Sunoco shall submit a revised BWON Sampling Plan to EPA for approval. If, after two (2) years in which Sunoco has implemented monthly and quarterly sampling requirements pursuant to an EPA-approved BWON Sampling Plan, Sunoco determines that a less stringent sampling plan will provide an accurate determination of a Covered Refinery's uncontrolled benzene quantity, Sunoco may request a modification to the EPA-approved BWON Sampling Plan for any Covered Refinery; provided, however, that Sunoco may not implement any modifications if EPA disapproves the plan within 90 days of its submission to EPA.

iv. Plan Implementation. Sunoco shall commence monthly, quarterly, and annual sampling required under an EPA-approved BWON Sampling Plan in the first full calendar month after Sunoco receives EPA's approval of the Plan, and shall continue monthly and quarterly sampling as required by the EPA-approved Plan through the Date of Termination.

b. BWON Sampling Plan Content.

i. Covered Refinery. Sunoco's BWON Sampling Plan for each Covered Refinery subject to the 2 Mg Compliance Option shall include: (i) a plan for conducting end-of-line ("EOL") sampling pursuant to Paragraph 75.c on a monthly basis (three (3) samples in the quarter, one (1) each month); (ii) a plan for conducting non-EOL sampling pursuant to Paragraph 75.d.ii on a quarterly basis; (iii) an identification of all proposed sampling locations; and (iv) a description of the proposed flow calculation method to be used in making quarterly benzene determinations under Paragraph 75.e. At each Covered Refinery, EOL sampling means sampling at the last practicable point before the waste stream enters a controlled waste management unit, if, based on engineering judgment, EOL sampling would provide a result different than would be provided at the point of waste generation. EOL sampling is not required once the stream has entered a controlled waste management unit, as long as the waste stream remains controlled until either final discharge or discharge to an activated sludge treatment unit.

ii. Tulsa Refinery. So long as the Tulsa Refinery TAB does not equal or exceed 10 Mg/yr, Sunoco's BWON Sampling Plan for the Tulsa Refinery shall include: (i) a plan for conducting EOL sampling pursuant to Paragraph 75.c on a monthly basis; (ii) a plan for conducting non-EOL sampling pursuant to Paragraph 75.d.i on an annual basis; (iii) an identification of all proposed sampling locations; and (iv) a description of

the proposed flow calculation method to be used in making quarterly benzene determinations under Paragraph 75.e.

c. EOL Sampling. Sunoco shall take, and have analyzed, no less than three (3) representative samples from each EOL sampling location identified in an approved BWON Sampling Plan. Sunoco shall use the average of these three samples as the benzene concentration for the stream at the approved sampling location. All sampling results under this Paragraph shall be reported to EPA in the reports due under either Section IX of this Decree or pursuant to 40 C.F.R. § 61.357.

d. Non-EOL (Point of Generation) Sampling.

i. For the Tulsa Refinery, Sunoco's BWON Sampling Plan shall include a plan for sampling each uncontrolled stream, at the point of generation, which contributes 0.05 Mg/yr or more to the Tulsa Refinery's annual uncontrolled benzene quantity, for years in which the EOL sampling indicates a TAB of greater than 6 Mg/yr.

ii. For Covered Refineries, Sunoco's BWON Sampling Plan shall include a plan for sampling: (i) each uncontrolled waste stream that contributes greater than 0.05 Mg benzene per year toward the 2 Mg annual exempt waste total; and (ii) each uncontrolled waste stream that contains greater than 0.1 Mg benzene per year and that qualifies for the 10 ppmw benzene exemption.

iii. Sunoco shall conduct all sampling under this Paragraph 75.d in compliance with the requirements of 40 C.F.R. § 61.355(c)(1) and (3). All sampling results under this Paragraph shall be reported to EPA in the

reports due under either Section IX of this Decree or pursuant to 40 C.F.R. § 61.357.

e. Calculation of Quarterly and Projected Calendar Year Benzene Quantities. At the end of each Calendar Quarter and based on the EOL sampling results and non-EOL sampling results and the approved flow calculations for each Covered Refinery, Sunoco shall calculate a quarterly benzene quantity and shall estimate a projected calendar year benzene quantity for each Covered Refinery. Sunoco shall submit the benzene quantity calculations in the reports due under Section IX of this Decree, and explain any anomalies or abnormalities. Sunoco may exclude explainable anomalies or abnormalities that are not expected to recur in the calendar year from estimations of the projected benzene quantity.

f. Corrective Measures. Based on the calculations in Paragraph 75.e., Sunoco shall determine if the projected calendar year benzene quantity equals or exceeds:

1. 10.0 Megagrams at the Tulsa Refinery; or
2. 2.0 Megagrams (uncontrolled) at the Covered Refinery.

If either of the conditions in this Paragraph 75.f exist then, for the relevant Refinery, Sunoco shall submit for EPA approval a compliance-assurance plan that identifies all corrective actions that Sunoco has taken or plans to take to ensure that noncompliance will not occur. If Sunoco cannot ensure that noncompliance will not occur, Sunoco shall make a statement to that effect in the report required by Paragraph 75.e. Sunoco shall submit the compliance-assurance plan by no later than 60 days after the end of the Calendar Quarter in which one or more of the conditions in this Paragraph 75.f are met. Sunoco shall implement the compliance assurance plan in accordance with

the schedule included in the approved plan. If EPA disapproves the compliance-assurance plan, Sunoco shall confer with EPA to develop a mutually acceptable compliance-assurance plan.

g. Third-Party TAB Study and Compliance Review. If, after two (2) consecutive Calendar Quarters it appears likely based on best engineering judgment that, at the end of the calendar year Sunoco will not be in compliance with the 2 Mg Option at each Covered Refinery, or its TAB will exceed 10 Mg/yr at the Tulsa Refinery, then, in the third Calendar Quarter, Sunoco shall retain a third party contractor to undertake a comprehensive TAB study and compliance review ("Third-Party TAB Study and Compliance Review") at that Refinery. By no later than the last day of the third Calendar Quarter, Sunoco shall submit a proposal to EPA that identifies the contractor, the contractor's scope of work, and the contractor's schedule for the Third-Party TAB Study and Compliance Review. Unless, within 30 days after EPA receives this proposal, EPA disapproves it or seeks modifications, Sunoco shall authorize the contractor to commence work, and Sunoco shall ensure that the work is completed in accordance with the approved schedule. By no later than 30 days after Sunoco receives the results of the Third-Party TAB Study and Compliance Review, Sunoco shall submit the results to EPA. After the report is submitted to EPA, Sunoco and EPA shall discuss informally the results of the Third-Party TAB Study and Compliance Review. By no later than 90 days after Sunoco receives the results of the Third-Party TAB Study and Compliance Review, or at such other time as Sunoco and EPA may agree, Sunoco shall submit to EPA for approval a plan and schedule for remedying any deficiencies identified in the Third-Party TAB Study and Compliance Review and any deficiencies that EPA brought to Sunoco's

attention as a result of the Third-Party TAB Study and Compliance Review. Sunoco shall implement the EPA-approved remedial plan in accordance with the schedule included in the approved plan. If, for the Tulsa Refinery, it appears that appropriate actions cannot be taken to ensure that the Tulsa Refinery consistently can maintain a TAB of under 10 Mg/yr when measured at the point of generation, then Sunoco's plan shall identify with specificity the compliance strategy and schedule that Sunoco shall implement to ensure that the Tulsa Refinery complies with the 6BQ Compliance Option as soon as practicable.

76. **Miscellaneous Measures**.

a. Sunoco, as and to the extent applicable, shall comply with the Benzene Waste Operations NESHAP provisions applicable to groundwater remediation conveyance systems at each Covered Refinery.

b. The provisions of this Paragraph 76 shall apply: (i) to the Covered Refineries as of Date of Entry of the Consent Decree; and (ii) to the Tulsa Refinery, if and when its TAB reaches or exceeds 10 Mg/yr, after full implementation of an approved compliance plan submitted pursuant to either Subparagraph 68.a.ii or Paragraph 75.f. The provisions shall continue to apply until the Date of Termination.

i. Sunoco shall conduct monthly visual inspections of all water traps within the Covered Refinery's individual drain systems.

ii. On a weekly basis, visually inspect all conservation vent indicators or other leak or flow indicators on junction boxes or on process sewers for detectable leaks; if necessary, reset any vents where leaks are detected; and record the results of the inspections. After two (2) years of weekly

inspections, and based upon an evaluation of the recorded results, Sunoco may submit a request to the appropriate EPA Region to modify the frequency of the inspections. Nothing in this Paragraph 76 shall require Sunoco to monitor conservation vents on fixed roof tanks.

iii. On a quarterly basis, Sunoco shall conduct monitoring of controlled oil-water separators in accordance with applicable BWON standards.

c. For each Covered Refinery, by no later than 60 days after Date of Entry and continuing until Date of Termination, Sunoco shall identify and mark all area drains that are segregated stormwater drains.

77. **Recordkeeping and Reporting Requirements for this Section**.

a. Outside of the Reports required under 40 C.F.R. § 61.357 and under the progress report procedures of Section IX of this Consent Decree, to the extent required by this Decree, and at the times specified by this Section V.M , Sunoco shall submit the following reports to EPA:

i. Phase One BWON Compliance Review and Verification Report(s) (Paragraph 67.a);

ii. Phase Two BWON Compliance Review and Verification Report(s), as amended, if necessary (Paragraph 67.b);

iii. Amended TAB Report(s), if necessary (Paragraph 67.c);

iv. Any BWON Corrective Action Plans required if the BWON Compliance Review and Verification Reports indicate non-compliance (Paragraph 68.a.i.);

v. A BWON Corrective Action Plan for the Tulsa Refinery if the Refinery's TAB is found to equal or exceed 10 Mg/yr (Paragraph 68.a.ii.);

vi. Certification of compliance, if necessary (Paragraph 68.b);

vii. A report certifying the completion of the installation of dual carbon canisters (Paragraph 69.b);

viii. Schematics of waste/slop/off-spec oil movements, as revised, if necessary (Paragraph 74.a);

ix. A plan and schedule for installing and operating necessary controls on waste management units handling organic benzene waste, if necessary (Paragraph 74.b);

x. A plan to quantify uncontrolled waste/slop/off-spec oil movements (Paragraph 75.a.i);

xi. BWON Sampling Plans and revised BWON Sampling Plans, if necessary (Paragraph 75);

xii. A Corrective Measures Plan (Paragraph 75.f);

xiii. A proposal for a Third-Party TAB Study and Compliance Review, if necessary (Paragraph 75.g);

xiv. A Third-Party TAB Study and Compliance Review, if necessary (Paragraph 75.g); and

xv. A plan to implement the results of the Third-Party TAB Study and Compliance Review, if necessary (Paragraph 75.g).

b. As part of either the Reports Required under 40 C.F.R. § 61.357 or the progress report procedures of Section IX of the Consent Decree, to the extent required by

this Decree, and at the times specified by this Section V.M, Sunoco shall submit the following reports to EPA:

i. Covered Refinery. In addition to the information submitted in the reports required pursuant to 40 C.F.R. §§ 61.357(d)(6) and (7) ("Section 61.357 Reports"), each Covered Refinery shall include the following information in those reports or in the reports due under Section IX of this Decree:

(1) Laboratory Audits. In the first Section 61.357 Report or first Section IX report due after Sunoco has completed the requirements of Paragraph 71.a, Sunoco shall identify all laboratory audits that Sunoco completed, including, at a minimum, the identification of each laboratory audited, a description of the methods used in the audit, and the results of the audit. In each subsequent 61.357 Report or Section IX report, Sunoco shall identify all laboratory audits that were completed pursuant to the provisions of Paragraph 71.b during the Calendar Quarter, including in each such Report, at a minimum, the identification of each laboratory audited, a description of the methods used in the audit, and the results of the audit;

(2) Training. In the first Section 61.357 Report or Section IX report due after entry of this Consent Decree, Sunoco shall describe the measures that it took to comply with the training provisions of Paragraph 73 starting from Date of Entry of the Consent Decree and continuing through the Calendar Quarter for which the first

report is due. In each subsequent Section 61.357 Report or Section IX report, Sunoco shall describe the measures that Sunoco took to comply with the training provisions of Paragraph 73 during the Calendar Quarter;

(3) Sampling Results. Once EOL sampling and non-EOL sampling is required under this Section, Sunoco shall report, in each Section 61.357 Report or each Section IX report, the results of the monthly EOL sampling and quarterly non-EOL sampling undertaken pursuant to Paragraph 75. For each Covered Refinery, the report shall include a list of all waste streams sampled, the results of the benzene analysis for each sample, and the computation of the quarterly benzene quantity and the projected calendar year benzene quantity.

ii. Tulsa Refinery. Sunoco shall submit, for the Tulsa Refinery, the information required by this Subparagraph 77.b.ii in Section IX reports. For each Calendar Quarter, Sunoco shall submit, for the Tulsa Refinery, the information described in subparagraphs 77.b.i(1), i(3). If, before the Date of Termination, the TAB at the Tulsa Refinery equals or exceeds 10 Mg/yr and Sunoco completes the installation of the measures necessary to comply with the 6BQ Compliance Option at the Tulsa Refinery, Sunoco must submit the information described in subparagraphs 77.b.i(1), i(3) and may elect to submit this information in Section 61.357 Reports instead of the Section IX reports.

N. Leak Detection and Repair Program Enhancements.

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 equipment in light liquid and/or in gas/vapor service, Sunoco shall implement the measures required by this Section V.N to enhance each Refinery's LDAR program under Title 40 of the Code of Federal Regulations, Part 60, Subpart GGG; Part 61, Subparts J and V; Part 63, Subparts F, H, and CC; and applicable state LDAR requirements. The terms "equipment," "in light liquid service" and "in gas/vapor service" shall have the definitions set forth in the applicable provisions of Title 40 of the Code of Federal Regulations, Part 60, Subpart GGG; Part 61, Subparts J and V; Part 63, Subparts F, H and CC; and applicable state LDAR regulations.

78. **Written Refinery-Wide LDAR Program and Compliance Certification.**

Enhanced LDAR Program Description. By no later than 180 days after Date of Entry of the Consent Decree, Sunoco shall develop, for each Refinery, a written description of a refinery-wide program designed to achieve and maintain compliance with all applicable federal and state LDAR regulations, as well as all requirements imposed by this Section V.N. Sunoco shall update each Refinery's program description as necessary to ensure continuing compliance. By no later than 180 days after Date of Entry of the Consent Decree, Sunoco shall submit copies of its enhanced LDAR program descriptions to EPA and the Appropriate Plaintiff/Intervenor, and shall maintain at each Refinery an updated version of that Refinery's program description. Until the Date of

Termination, Sunoco shall use the enhanced LDAR program descriptions prepared pursuant to this Paragraph to implement an enhanced LDAR program at each Refinery, as required by this Section V.N. Each Refinery's program description shall include at a minimum:

a. A set of refinery-specific leak rate goals that will be a target for achievement on a process-unit-by-process-unit basis;

b. An identification of all equipment in light liquid and/or in gas/vapor service that has the potential to leak VOCs, HAPs, VHAPs, and benzene within process units that are owned and maintained at each Refinery;

c. Procedures for identifying leaking equipment within process units that are owned and maintained at each Refinery;

d. Procedures for repairing and keeping track of leaking equipment;

e. Procedures for identifying and including in the LDAR program new equipment;

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

g. A designation of the "LDAR Personnel" and the "LDAR Coordinator" who are responsible for implementing the enhanced LDAR program at the Refinery; and

h. Procedures designed to ensure that components subject to LDAR requirements that are added to the Refinery during scheduled maintenance and construction activities are integrated into the enhanced LDAR program.

79. **Training**. By no later than one (1) year from Date of Entry of the Consent Decree, Sunoco shall implement a training program that includes the following features at each Refinery:

a. Any person assigned LDAR program responsibilities at a Refinery shall be given initial training as described by this Paragraph 79 before performing any LDAR work;

b. For any Sunoco employees assigned LDAR responsibilities as a primary job function (such as monitoring technicians, database users, QA/QC personnel, and the LDAR Coordinator), Sunoco shall provide and require completion of annual LDAR training (on an initial and recurrent basis);

c. For all other Sunoco operations and maintenance personnel, Sunoco shall provide and require completion of annual training (on an initial and recurrent basis) on aspects of LDAR that are relevant to the person's duties; and,

d. For contract employees who perform LDAR work at a particular Refinery, Sunoco shall either provide those personnel annual training (on an initial and recurrent basis) as described by this Paragraph 79, or shall require that the contractor provides annual training (on an initial and recurrent basis) as described by this Paragraph.

80. **LDAR Audits**.

a. Initial Compliance Audit. By no later than 270 days after Date of Entry of the Consent Decree, a third-party contractor retained by Sunoco shall complete a refinery-wide initial audit of its compliance with all applicable LDAR requirements at each Refinery, which shall include, at a minimum: (i) performing comparative monitoring; (ii) reviewing records to ensure that monitoring and repairs have been completed in the required timeframes; (iii) reviewing component identification procedures and data management procedures; (iv) observing LDAR technicians' calibration and monitoring techniques; and (v) an applicability review for regulations potentially applicable to Sunoco process units. Within 90 days after completing the Initial Compliance Audit, Sunoco shall submit to EPA an Initial Compliance Audit Report which shall describe the results of the audit, disclose all areas of identified non-compliance, identify all steps taken to remedy the identified non-compliance, and certify Sunoco's full compliance with all applicable LDAR requirements as of the date of the Report.

b. Commencing on Date of Entry of the Consent Decree, Sunoco shall implement at each Refinery, the refinery-wide audits set forth in Paragraphs 80.c and 80.d to ensure each Refinery's compliance with all applicable LDAR requirements. Sunoco's LDAR audits shall include, at a minimum: (i) performing comparative monitoring; (ii) reviewing records to ensure that monitoring and repairs have been completed in the required timeframes; (iii) reviewing component identification procedures and data management procedures; and (iv) observing LDAR technicians' calibration and monitoring techniques. To ensure that an audit at each Refinery occurs

every two years, third-party audits required by Paragraph 80.c and the internal audits required by Paragraph 80.d shall be separated by two (2) years. As an alternative to the internal audits required by Paragraph 80.d, Sunoco may elect to retain third-parties to undertake these audits, provided that an audit of each Refinery occurs every two (2) years. For each audit conducted under Paragraph 80.c or d, Sunoco shall require the auditors to prepare a written audit report describing the audit's scope and findings.

c. Third-Party Audits. Sunoco shall retain a contractor(s) to perform a third-party audit of each Refinery's LDAR program at least once every four (4) years.

d. Internal Audits. Sunoco shall conduct internal audits of each Refinery's LDAR program by sending personnel familiar with the LDAR program and its requirements from one or more of Sunoco's Refineries or locations to audit another Sunoco Refinery. Sunoco shall complete the first round of these internal LDAR audits by no later than two (2) years from the date of the completion of the initial third-party audit required in Paragraph 80.a. Internal audits at each Refinery shall be held every four (4) years thereafter until the Date of Termination unless Sunoco elects to retain third-parties to conduct these audits pursuant to Paragraph 80.c.

81. **Actions Necessary to Correct Noncompliance**. If the results of any of the audits conducted pursuant to Paragraph 80 at any of the Refineries identify any areas of noncompliance, Sunoco shall implement, as soon as practicable, all steps necessary to correct the area(s) of noncompliance, and to prevent, to the extent practicable, a recurrence of the cause of the noncompliance. Until the Date of Termination, Sunoco shall retain the audit reports for all audits conducted pursuant to Paragraphs 80.c and d and shall maintain a written record of the corrective actions that Sunoco takes at each

Refinery in response to any deficiencies identified in any audits. In the semiannual report submitted pursuant to the provisions of Section IX of this Consent Decree ("Reporting and Recordkeeping") for the first semiannual period of each calendar year, Sunoco shall submit the audit reports and corrective action records for audits performed and actions taken during the previous calendar year.

82. **Internal Leak Definition for Valves and Pumps**. By no later than two (2) years after Date of Entry of the Consent Decree, Sunoco shall utilize the following internal leak definitions for valves and pumps in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions.

a. Leak Definition for Valves. Sunoco shall utilize an internal leak definition of 500 ppm VOCs for all of its Refineries' valves, excluding pressure relief devices.

b. Leak Definition for Pumps. Sunoco shall utilize an internal leak definition of 2000 ppm for its Refineries' pumps.

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

a. Reporting. For regulatory reporting purposes, Sunoco 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 Paragraph 82.

b. Recording, Tracking, Repairing and Remonitoring Leaks. Sunoco shall record, track, repair, and remonitor all leaks above the internal leak definitions specified by Paragraph 82 (at such time as those definitions become applicable). For any component leaking above the applicable regulatory leak rate, Sunoco shall repair and remonitor the component or place the component on a "delay of repair" list as required

by the applicable regulations and Paragraph 90. For any component leaking above the internal leak definitions specified by Paragraph 82 but below the applicable regulatory leak rate, Sunoco shall make an initial attempt at repair and remonitor the component within five (5) calendar days, and shall complete repairs and remonitor the component or place the component on a "delay of repair" list according to Paragraph 90 within 30 calendar days.

84. **LDAR Monitoring Frequency**.

a. Pumps. By no later than the date the internal leak definitions under Paragraph 82 become effective, Sunoco shall monitor pumps at the lower leak definition established by Paragraph 82.b on a monthly basis, unless more frequent monitoring is required by a federal, state, or local regulation.

b. Valves. By no later than the date the internal leak definitions under Paragraph 82 become effective, Sunoco shall implement a program to monitor valves at the lower leak definition established by Paragraph 82.a on a quarterly basis, unless more frequent monitoring is required by a federal, state, or local regulation.

85. **First Attempt at Repairs on Valves**. Commencing no later than 90 days after Date of Entry of the Consent Decree, Sunoco shall make a "first attempt at repair" within one (1) calendar day on any valve that has a reading greater than 200 ppm of VOCs and that LDAR personnel are authorized to repair. Sunoco or its designated contractor shall remonitor all valves no later than the next calendar day at that Refinery where LDAR personnel made a "first attempt at repair." If the re-monitored leak reading is greater than the applicable leak definition, Sunoco may delay further repairs up to five (5) days after initial identification in order to assess the persistence of the leak

by re-monitoring again. If the re-monitored leak reading is below the applicable leak definition, no further action will be necessary. If the re-monitored leak reading is greater than the applicable leak definition, Sunoco shall repair the valve according to the requirements of Paragraph 83.b., except that no first repair attempt requirement shall apply.

86. **Electronic Monitoring, Storing, and Reporting of LDAR Data**.

a. Electronic Storing and Reporting of LDAR Data. At each Refinery, Sunoco will develop or continue to maintain an electronic database for storing and reporting LDAR data.

b. Electronic Data Collection During LDAR Monitoring and Transfer Thereafter. By no later than 180 days after Date of Entry of the Consent Decree, for each Refinery, Sunoco shall make maximum possible use of dataloggers and/or other electronic data collection devices for all data collection during all LDAR monitoring. Sunoco shall ensure that the responsible Sunoco employees or contractor personnel shall transfer, on a daily basis, electronic data from electronic datalogging devices to the electronic database required by Paragraph 86.a. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include an accurate time and date stamp for each monitoring event, the monitoring reading, and identifying information on the operator and the instrument used in the monitored event. Sunoco 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, at a minimum, the identification of the technician undertaking the monitoring, the date, daily start and end times for the monitoring conducted, each monitoring reading, and the

identification of the monitoring equipment. Sunoco shall transfer any manually recorded monitoring data to the electronic database required by Paragraph 86.a within seven (7) days of monitoring.

87. **QA/QC of LDAR Data**.

a. By no later than 120 days after Date of Entry of the Consent Decree, Sunoco, or a third-party contractor retained by Sunoco, shall develop and implement a procedure at each Refinery to ensure a quality assurance/quality control ("QA/QC") review of all data generated by LDAR monitoring technicians.

i. Sunoco shall ensure that monitoring data provided to Sunoco by its contractors is reviewed for QA/QC before the contractor submits the data to Sunoco.

ii. At least once per Calendar Quarter, Sunoco shall perform QA/QC of any 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.

iii. Sunoco shall implement a system for daily reporting of monitored activity and for periodically reviewing the daily results by appropriate operating supervisors.

88. **LDAR Personnel**. By no later than 180 days after Date of Entry of the Consent Decree, Sunoco shall establish a program that will hold LDAR personnel accountable for LDAR performance. Sunoco shall establish and maintain an LDAR Coordinator position within each Refinery, responsible for LDAR management, with the authority to implement improvements.

89. **Calibration/Calibration Drift Assessment**.

a. Calibration. Commencing on Date of Entry of the Consent Decree, Sunoco shall conduct all calibrations of LDAR monitoring equipment at each Refinery in accordance with 40 C.F.R. Part 60, EPA Reference Test Method 21.

b. Calibration Drift Assessment. Commencing on Date of Entry of the Consent Decree, at each Refinery, Sunoco shall conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift, at a minimum. Sunoco shall conduct the calibration drift assessment using, at a minimum, a calibration gas corresponding to the applicable leak threshold. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, Sunoco shall remonitor all valves that were monitored since the last calibration that had a reading greater than 100 ppm and shall remonitor all pumps that were monitored since the last calibration that had a reading greater than 500 ppm.

c. Sunoco shall maintain records of all instrument calibrations for a period of one year after performing the calibrations.

90. **Delay of Repair and Required Repairs**.

a. Within 30 days of submittal of the enhanced LDAR program description described in Paragraph 78, Sunoco shall comply with the provisions of this Paragraph 90 at each Refinery.

b. Delay of Repair. For any equipment that Sunoco is allowed under the applicable regulations to place on the "delay of repair" list for repair, Sunoco shall:

i. Require sign-off by the appropriate operating supervisor (which position will be identified in the Refinery's written enhanced LDAR program

description) that the valve or pump is eligible for inclusion on the "delay of repair" list; and

ii. Include any valve or pump that is placed on the "delay of repair" list in Sunoco's regular LDAR monitoring.

c. Required Repairs on Leaking Valves.

i. Within 30 days of the implementation of the enhanced LDAR program, for valves, other than control valves, leaking at a rate of 10,000 ppm or greater and which cannot be repaired using traditional techniques, Sunoco shall use the "drill and tap" or similarly effective method to repair the leaking valve, rather than placing the valve on the "delay of repair" list, unless Sunoco can demonstrate that there is a safety, mechanical, or major environmental concern posed by repairing the leak in that manner. If not repaired within fifteen (15) days by other means, Sunoco shall make the first "drill and tap" or similarly effective repair attempt within fifteen (15) days after the leak was identified, and shall have 45 days after the leak was identified to complete the repair attempts.

ii. Within 30 days of the implementation of the enhanced LDAR program, for valves other than control valves or pressure relief valves leaking at a rate of 50,000 ppm or greater, Sunoco shall use the "drill and tap" or similarly effective method to repair the leaking valve, rather than placing the valve on the "delay of repair" list, unless Sunoco can demonstrate that there is a safety, mechanical, or major environmental concern posed by repairing the leak in that manner. If not repaired within fifteen (15) days

by other means, Sunoco shall make the first "drill and tap" or similarly effective repair attempt within fifteen (15) days after the leak was identified, and shall have 21 days after the leak was identified to complete the repair attempts.

iii. After two unsuccessful attempts to repair a leaking valve through the "drill and tap" or similarly effective repair method, Sunoco may place the leaking valve on its "delay of repair" list. Sunoco shall inform EPA of any similarly effective repair methods (alternate repair methods to "drill and tap") used to comply with Paragraphs 90.c.i or 90.c.ii of this Consent Decree.

91. **Chronic Leaker Program**. Sunoco shall replace, repack, or perform similarly effective repairs on all "chronic leaker" non-control valves during the next process unit turnaround. A component shall be classified as a "chronic leaker" under this Paragraph 91 if it leaks above 5000 ppm twice in any consecutive four (4) Calendar Quarters, unless the component has not leaked in the six (6) consecutive Calendar Quarters prior to the relevant process unit turnaround.

92. **Recordkeeping and Reporting Requirements for this Section**.

a. Outside of the reports required under 40 C.F.R. § 63.654 and the progress report procedures of Section IX, no later than 30 days after completion of the development of the written refinery-wide enhanced LDAR program descriptions that Sunoco develops pursuant to Paragraph 78, Sunoco shall submit a copy of each Covered Refinery's program description to the Relevant Government Agencies.

b. Consistent with the requirements of Section IX, at the later of: (i) the first progress report due under the Consent Decree; or (ii) the first progress report in which the requirement becomes due, Sunoco shall include the following:

i. A certification of the implementation of the "first attempt at repair" program under Paragraph 85;

ii. A certification of the implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 87;

iii. An identification of the LDAR Coordinator at each Refinery responsible for LDAR performance as required by Paragraph 88;

iv. A certification of the implementation of the calibration drift assessment procedures of Paragraph 89;

v. A certification of the implementation of the "delay of repair" procedures of Paragraph 90; and

vi. A certification of the implementation of the internal leak definition and monitoring frequency procedures under Paragraphs 82 and 84.

c. Semiannual reports due under 40 C.F.R. § 63.654. In the first semiannual report of each calendar year required under 40 C.F.R. § 63.654, Sunoco shall identify each audit that was conducted pursuant to the requirements of Paragraph 80 in the previous calendar year including, for each Refinery, an identification of the auditors, a summary of the audit results, and a summary of the actions that Sunoco took or intend to take to correct all deficiencies identified in the audits. In each semiannual report due under 40 C.F.R. § 63.654, Sunoco shall include:

i. Training. Information identifying the measures that Sunoco took to comply with the provisions of Paragraph 79; and

ii. Monitoring. The following information on LDAR monitoring: (a) a list of the process units monitored during the quarter; (b) the number of valves and pumps monitored in each process unit; (c) the number of valves and pumps found leaking; (d) the number of components not fixed within 30 days or placed on the delay of repair list; (e) the number of first repair attempts not completed within five (5) days; (f) the number of first attempts not performed within one (1) day according to Paragraph 85; (g) the number of "difficult to monitor" pieces of equipment monitored; (h) number of all chronic leakers not repaired during the prior turnaround; and (i) a list of all equipment currently on the "delay of repair" list and the date each component was placed on the list; and the number of repair attempts not completed according to the timeframes in Paragraph 90.

O. Incorporation of Consent Decree Requirements into Federally Enforceable Permits.

93. **Obtaining Permit Limits for Consent Decree Emission Limits That Are Effective Upon Date of Entry**. Except as set forth below, by no later than 180 days after Date of Entry Sunoco shall submit applications to the relevant permitting authority to incorporate the emission limits and standards required by the Consent Decree that are effective as of Date of Entry of the Consent Decree into federally enforceable minor or major new source review permits or other permits (other than Title V permits) that are federally enforceable. If another application for a permit or

permit modification is due for the same emissions unit within 365 days of Date of Entry, Sunoco shall submit both such applications by the application/renewal date. Upon issuance of such permits or in conjunction with such permitting, Sunoco shall file any applications necessary to incorporate the requirements of those permits into the Title V permit for the relevant Sunoco Refinery.

94. **Obtaining Permit Limits For Consent Decree Emission Limits That Become Effective After Date of Entry**. Except as set forth below, as soon as practicable, but in no event later than 90 days after the effective date or establishment of any emission limits and standards under Section V of this Consent Decree, Sunoco shall submit applications to the relevant 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. Upon issuance of such permit or in conjunction with such permitting, Sunoco shall file any applications necessary to incorporate the requirements of that permit into the Title V permit of the appropriate Sunoco Refinery.

95. **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 Sunoco Refineries as required by Paragraphs 93 and 94 shall be in accordance with the applicable state or local Title V rules. To the extent possible, these will be incorporated as an administrative permit amendment.

96. **Construction Permits**. Sunoco agrees to obtain all required, federally enforceable permits for the construction of the pollution control technology and/or the installation of equipment necessary to implement the Affirmative Relief/Environmental

Projects set forth in this Section V of this Consent Decree. This Paragraph 96 is not intended to prevent Sunoco from applying to the relevant permitting authority for or otherwise using an available pollution control project or clean unit exemption.

VI. EMISSION CREDIT GENERATION

97. **General Prohibition**. Sunoco shall not generate or use any NO_x, SO_2, PM, VOC, or CO emissions reductions that result from any projects conducted or controls utilized to comply with this Consent Decree as netting reductions or emissions offsets in any PSD, major non-attainment and/or minor New Source Review ("NSR") permit or permit proceeding unless otherwise authorized under Paragraphs 99 or 100. The parties agree that this Consent Decree neither prohibits, nor provides any basis for prohibiting, Sunoco from combining decreases in emissions resulting from work pursuant to this Consent Decree with emissions increases resulting from work related to a FCCU expansion undertaken at the same time, in any emissions calculation for any single permit or permit proceeding that involves both installation of controls pursuant to this Consent Decree and construction related to the FCCU expansion. PADEP, AMS, and Sunoco further agree that this Consent Decree neither prohibits, nor provides any basis for prohibiting, nor authorizes, nor provides any basis for authorizing, Sunoco from using, under Pennsylvania's PSD and non-attainment NSR programs, SO_3 reductions resulting from the installation of controls when addressing emissions of $PM_{2.5.}$ AMS and Sunoco further agree that when permitting the FCCU expansions and related projects undertaken at the same time as discussed above, under Pennsylvania's PSD and non-attainment NSR programs at the Philadelphia Refinery, Sunoco and AMS may use up to 10% of the SO_2 emissions reductions (excluding the SO_2 portion attributable to the combustion of sour water stripper gas in the CO Boiler), and up to

15% of the NO_x emissions reductions that result from installation of SCR and WGS on the FCCU. PADEP and Sunoco further agree that when permitting the FCCU expansions and related projects undertaken at the same time as discussed above, under Pennsylvania's PSD and non-attainment NSR programs at the Marcus Hook Refinery, Sunoco and PADEP may use up to 5% of the SO_2 emissions reductions and up to 15% of the NO_x emissions reductions that result from installation of SCR and WGS on the FCCU. Except as provided in paragraphs 99 and 100, all of the remaining SO_2 and NO_x emissions reductions that are not used at that time shall be permanently retired.

98. **Conditions Precedent to Utilizing Exception to General Prohibition**. Utilization of the exception set forth in Paragraph 99 to the general prohibition against the generation or utilization of CD emissions reductions set forth in Paragraph 97 is subject to the following conditions:

a. Under no circumstances shall Sunoco use CD emissions reductions for netting and/or offsets prior to the time that actual CD emissions reductions have occurred;

b. CD emissions reductions may be used only at the Refinery that generated them;

c. The CD emissions reductions provisions of this Consent Decree are for purposes of this Consent Decree only and neither Sunoco, nor any other entity may use CD emissions reductions for any purpose, including in any subsequent permitting or enforcement proceeding, except as provided herein; and

d. Sunoco still shall be subject to all federal, state, and local regulations applicable to the PSD, major non-attainment and/or minor NSR permitting process.

99. **Exception to General Prohibition**. Notwithstanding the general prohibition set forth in Paragraph 97, Sunoco may use, in total for all of its Refineries, 250 tons per year of NO_x, 15 tons per year of PM, and 250 tons per year of SO_2 from the CD emissions reductions as credits or offsets in any PSD, major non-attainment and/or minor NSR permit(s) or permit proceeding(s) occurring after the Date of Lodging of this Consent Decree, provided that the emissions units at which credits are being used: (1) are constructed or modified for purposes of compliance with Tier 2 gasoline or ultra-low sulfur diesel requirements; and (2) have a federally enforceable permit that reflects the following requirements that are applicable to the pollutants for which credits are being used:

a. For heaters and boilers, a limit of 0.020 lbs NO_x per million BTU or less on a 3-hour rolling average basis.

b. For heaters and boilers, a limit of 0.10 grains of hydrogen sulfide per dry standard cubic foot of fuel gas or 20 ppmvd SO_2 corrected to 0% O_2 both on a 3-hour rolling average;

c. For heaters and boilers, no liquid or solid fuel firing authorization;

d. For FCCUs, a limit of 20 ppmvd NO_x corrected to 0% O_2 or less on a 365-day rolling average basis; a limit of 25 ppmvd SO_2 corrected to 0% O_2 or less on a 365-day rolling average basis; and a limit of 0.5 pound of PM per 1000 pounds of coke burned on a 3-hour average basis; and

e. For SRPs, NSPS Subpart J emission limits.

100. **Outside the Scope of the General Prohibition**. Nothing in this Section VI is intended to prohibit Sunoco from seeking to, or an Appropriate

Plaintiff/Intervenor from denying Sunoco's request to: (1) utilize or generate emissions credits from refinery units that are covered by this Consent Decree to the extent that the proposed credits or reductions represent the difference between the emissions limitations set forth in or required by this Consent Decree for these refinery units and the more stringent emissions limitations that Sunoco may elect to accept for these refinery units in a permitting process; or (2) utilize or generate emissions credits or reductions on refinery units that are not subject to an emission limitation pursuant to this Consent Decree; or (3) utilize or generate emissions credits or reductions from heaters and boilers on which Qualifying Controls have been installed, provided that such reductions are not included in Sunoco's demonstration of compliance with the requirements of Paragraphs 27, 29, and 30 of this Consent Decree; or (4) utilize CD emissions reductions for a particular Refinery's compliance with any rules or regulations designed to address regional haze or the non-attainment status of any area (excluding PSD and Non-Attainment New Source Review Rules, but including, for example, RACT rules and the Northeast Ozone Transport Region NO_x Budget Program) that apply to the particular Refinery. Notwithstanding the preceding sentence, Sunoco will not trade or sell any CD emissions reductions.

VII. MODIFICATIONS TO IMPLEMENTATION SCHEDULES

101. **Securing Permits**. For any work under Section V of this Consent Decree that requires a federal, state, and/or local permit or approval, Sunoco shall be responsible for submitting in a timely fashion applications for federal, state and local permits and approvals for work and activities required so that permit or approval decisions can be made in a timely fashion. Sunoco shall: (i) submit permit applications (i.e., applications for permits to construct, operate, or their equivalent) that comply with

all applicable requirements; and (ii) secure permits after filing the applications, including timely provision of additional information, if requested. If it appears that the failure of a governmental entity to act upon or approve a timely submitted permit application may delay Sunoco's performance of work according to an applicable implementation schedule, Sunoco shall notify EPA and the Appropriate Plaintiff/Intervenor of any such delays as soon as Sunoco reasonably concludes that the delay could affect its ability to comply with the implementation schedule set forth in this Consent Decree. Sunoco shall propose for approval by EPA a modification to the applicable schedule of implementation. EPA, in consultation with the Appropriate Plaintiff/Intervenor, shall not unreasonably withhold its consent to requests for modifications of schedules of implementation if the requirements of this Paragraph are met. All modifications to any dates initially set forth in this Decree or in any approved schedule of implementation shall be signed in writing by EPA and Sunoco and neither the United States nor Sunoco shall be required to file such modifications with the Court in order for the modifications to be effective. Stipulated penalties shall not accrue nor be due and owing during any period between a scheduled implementation date and an approved modification to such date; provided however, that EPA and the Appropriate Plaintiff/Intervenor shall retain the right to seek stipulated penalties if EPA does not approve a modification to a date or dates, and Sunoco shall retain the right to dispute any claim for stipulated penalties pursuant to Section XV of this Decree. The failure of a governmental entity to act upon or approve a timely-submitted permit application shall not constitute a *force majeure* event triggering the requirements of Section XV; this Paragraph shall apply.

102. **Commercial Unavailability of Control Equipment**. Sunoco shall be solely responsible for compliance with any deadline or the performance of any work described in Section V of this Consent Decree that requires the acquisition and installation of control equipment. If it appears that the commercial unavailability of any control equipment may delay Sunoco's performance of work according to an applicable implementation schedule, Sunoco shall notify EPA and the Appropriate Plaintiff/Intervenor of any such delays as soon as Sunoco reasonably concludes that the delay could affect its ability to comply with the implementation schedule set forth in this Consent Decree.

Sunoco shall propose for approval by EPA, after consultation with the Appropriate Plaintiff/Intervenor, a modification to the applicable schedule of implementation. Prior to the notice required by this Paragraph, Sunoco must have contacted a reasonable number of vendors of such equipment and obtained a written representation (or equivalent communication to EPA) from the vendor that the equipment is commercially unavailable. In the notice, Sunoco shall reference this Paragraph 102 of this Consent Decree, identify the milestone date(s) it contends it will not be able to meet, provide the EPA and the Appropriate Plaintiff/Intervenor with written correspondence to the vendor identifying efforts made to secure the control equipment, and describe the specific efforts Sunoco has taken and will continue to take to find such equipment. Sunoco may propose a modified schedule or modification of other requirements of this Consent Decree to address such commercial unavailability. Section XV ("Retention of Jurisdiction/Dispute Resolution") shall govern the resolution of any claim of commercial unavailability. EPA, in consultation with the Appropriate Plaintiff/Intervenor, shall not

unreasonably withhold its consent to requests for modifications of schedules of implementation if the requirements of this Paragraph are met. All modifications to any dates initially set forth in this Consent Decree or in any approved schedule of implementation shall be signed in writing by EPA and Sunoco and neither the United States nor Sunoco shall be required to file such modifications with the Court in order for the modifications to be effective. Stipulated penalties shall not accrue nor be due and owing during any period between an originally-scheduled implementation date and an approved modification to such date; provided however, that EPA and the Appropriate Plaintiff/Intervenor shall retain the right to seek stipulated penalties if EPA does not approve a modification to a date or dates.

VIII. SUPPLEMENTAL AND COMMUNITY ENVIRONMENTAL PROJECTS AND STATE AND LOCAL ENVIRONMENTALLY BENEFICIAL PROJECTS

103. In accordance with the requirements and schedule set forth in this Section VIII, Sunoco shall spend no less than $3,900,000 to implement the Supplemental and Community Environmental Projects ("SCEPs") and State and Local Environmentally Beneficial Projects ("SLEBPs") described in Paragraphs 104-109 below. Sunoco may carry out its responsibilities for the SCEPs and SLEBPs identified below directly or through contractors selected by Sunoco.

104. The Pennsylvania Heater/Boiler SCEP.

a. By no later than the end of the first turnaround for heaters H-400 and H-401 at the Philadelphia Refinery that occurs on or after two (2) years from Date of Entry, or by December 31, 2010 (whichever first occurs), Sunoco shall install current generation ULNB, SCR, or equivalent technology on one or both of those heaters, or permanently shut down those heaters, to reduce 112 tons of NO_x emissions from those heaters. The

112 tons of emission reductions from heaters H-400 and H-401 shall not be used to achieve the NO_x emission reductions for heaters and boilers required by Section V.F of this Decree, and shall be permanently retired. Sunoco shall spend no less than $1,000,000 on this SCEP.

b. Sunoco may request that PADEP and/or AMS approve the substitution of another heater or boiler located in Pennsylvania for heaters H-400 and H-401. PADEP and/or AMS will approve Sunoco's request if Sunoco demonstrates that its actions will result in a reduction in NO_x emissions of at least 112 tons. If PADEP and/or AMS approve(s) a substitution, Sunoco shall not use emission reductions from the substitute heater or boiler to comply with Section V.F of this Decree.

105. Pennsylvania SLEBP. Within 60 days after the later of Date of Entry or receipt of deposit instructions from PADEP, Sunoco shall deposit $300,000 into an account that PADEP may draw on to provide funding for one or more of the following activities in southeast Pennsylvania:

a. Recycling

b. Emergency Response Training/Equipment

c. Health Care Services

d. Energy Conservation

As an alternative to the above funding mechanism, within 120 days after Date of Entry, PADEP may request in writing that Sunoco make payment directly to PADEP or to one or more community-based organizations to fund one or more of the above-listed activities. Sunoco shall make payment within 60 days after receipt of such request.

106. The Philadelphia Diesel Fuel Emissions Reduction SCEP. Sunoco shall provide the City of Philadelphia with a $400,000 credit to be applied, at the City's discretion, to (a) a twenty (20) cents per gallon discount or rebate on the price paid by the City of Philadelphia for ultra low sulfur diesel motor fuel currently manufactured by Sunoco, or (b) after the federally-mandated deadline for the supply of ultra low sulfur diesel motor fuel, the retail price of delivered ultra low sulfur diesel fuel at the time of supply. Sunoco shall provide an accounting to the City of Philadelphia on a quarterly basis commencing 180 days after Date of Entry until Sunoco has provided the entire amount of ultra low sulfur diesel fuel subject to this SCEP.

107. The Philadelphia FCCU 1232 Redundant Power Supply SCEP. By no later than June 30, 2008, Sunoco shall construct a double-ended electrical substation to provide redundant power supply to Philadelphia FCCU 1232, thereby minimizing the likelihood of unanticipated emissions that could result from power outages to the FCCU. Sunoco shall spend no less than $1,000,000 on this SCEP.

108. Philadelphia SLEBP. Within four (4) years from Date of Entry, Sunoco shall spend no less than $1,200,000 so diesel retrofit technologies are installed on diesel vehicles owned by the City of Philadelphia, or other municipalities or public agencies in the Philadelphia area, to reduce emissions of particulates and ozone precursors. Sunoco shall cooperate fully with the City of Philadelphia to implement this project. The City of Philadelphia shall identify the appropriate vehicles and arrange for the purchase and installation of diesel retrofit technology on those vehicles. The City shall submit to Sunoco invoices for the cost of purchasing and installing the diesel retrofit technology. Sunoco shall pay such invoices within 60 days of receipt.

109. Ohio SLEBP. Pursuant to Paragraph 120, in lieu of paying the civil penalty owed to Ohio under Paragraph 115, Sunoco shall pay an amount not to exceed $50,000.00 to a document conversion vendor acceptable to Ohio EPA to convert the existing hard copy air pollution Ohio State Implementation Plan documentation into an electronic format that can be accessed by the public and updated by Ohio EPA on an on-going basis. Ohio EPA will provide a list of acceptable vendors and their estimated costs for services to Sunoco by September 30, 2005. Sunoco shall choose an acceptable vendor and may be required to enter into contract with the private document conversion vendor. Ohio EPA will not receive any direct monies, but will manage the scope and level of services provided by the selected document conversion vendor. The purpose of this project is to develop a searchable database (Access, Oracle, etc.) of all SIP-related documents along with TIF or other scanned format of the originals. The final product may be scaled back to avoid exceeding the stipulated $50,000 maximum. Final product is to be delivered via CD or equivalent mechanism and in a format that can be uploaded to a LAN and/or web server for access by Ohio EPA, regulated industry, and public in a fully searchable manner with the ability of Ohio EPA to add documents over time. The work product will be owned by Ohio EPA.

110. Sunoco is responsible for the satisfactory completion of the SCEPs and SLEBPs required under this Consent Decree in accordance with Section VIII. Upon completion of a specific SCEP or SLEBP, Sunoco shall submit to EPA and the Appropriate Plaintiff/Intervenor a cost report certified as accurate under penalty of perjury by a responsible corporate official. If Sunoco does not expend the entire projected costs of the SCEPs and SLEBPs described Paragraphs 104-109 within two (2)

years of the dates specified in those paragraphs, for each SCEP or SLEBP, Sunoco shall pay a stipulated penalty equal to the difference between the amount expended as demonstrated in the certified costs reports and the cost identified in the paragraphs above. As an alternative to payment of the above penalty, Sunoco may request approval from EPA and PADEP, AMS, or Ohio, as appropriate, to use unexpended SCEP or SLEBP monies for other SCEPs or SLEBPs.

111. By signing this Consent Decree, Sunoco certifies that it is not required, and has no liability under any federal, state, or local law or regulation or pursuant to any agreements or orders of any court, to perform or develop the SCEPs or SLEBPs described in this Section VIII. Sunoco further certifies that it has not applied for or received, and will not in the future apply for or receive: (1) credit as a SCEP, SLEBP, or other penalty offset in any enforcement action for the SCEPs and SLEBPs described in this Section VIII; (2) credit for the 112 tons of NO_x emissions reductions resulting from the SCEP described in this Section VIII in any federal, state, or local emissions trading or early reduction program; or (3) a deduction from any federal, state, or local tax based on its participation in, performance of, or incurrence of costs related to the SCEPs and SLEBPs set forth in Section VIII.

112. Sunoco shall include in each report required by Paragraph 114 (Reporting and Recordkeeping) a progress report for each SCEP or SLEBP being performed under this Section VIII of this Consent Decree. In addition, the report required by Paragraph 114 (Reporting and Recordkeeping) of this Consent Decree for the period in which each SCEP or SLEBP identified in this Section VIII is completed shall contain the following information with respect to such SCEP(s) or SLEBP(s):

a. A detailed description of each project as implemented;

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

c. Certification that each project has been fully implemented pursuant to the provisions of this Consent Decree; and

d. A description of the environmental and public health benefits resulting from implementation of each project (including quantification of the benefits and pollutant reductions, where practicable).

113. Sunoco agrees that in any public statements regarding these SCEPs and SLEPBs, Sunoco 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.

IX. REPORTING AND RECORDKEEPING

114. Beginning with the first full Calendar Quarter after Date of Entry of the Consent Decree, Sunoco shall submit to EPA and the Appropriate Plaintiff/Intervenors within 30 days after the end of each Calendar Quarter through 2005, and semi-annually thereafter until termination of this Consent Decree, a progress report for each of the Sunoco Refineries. Each report shall contain, for the relevant Sunoco Refinery, the following: progress report on the implementation of the requirements of Section V ("Affirmative Relief/Environmental Projects") at the relevant Refinery; a summary of the emissions data for the relevant Refinery that is specifically required by the reporting requirements of Section V of this Consent Decree for the period covered by the report; a description of any problems anticipated with respect to meeting the requirements of Section V of this Consent Decree at the relevant Refinery; and any such additional

matters as Sunoco believes should be brought to the attention of EPA and the Appropriate Plaintiff/Intervenor. The report shall be certified by either the person responsible for environmental management at the appropriate Sunoco Refinery or by a person responsible for overseeing implementation of this Decree across Sunoco as follows:

> I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

X. CIVIL PENALTY

115. In satisfaction of the civil claims asserted by the United States in the complaint filed in this matter, by no later than 30 days after Date of Entry of this Consent Decree, Sunoco shall pay a civil penalty of $3,000,000 as follows: (1) $1,500,000 to the United States; (2) $900,000 to the Commonwealth of Pennsylvania; (3) $500,000 to the City of Philadelphia; (4) $50,000 to the State of Oklahoma; and (5) $50,000 to the State of Ohio.

116. Payment 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 USAO File Number_____, DOJ Case Number 90-5-2-1744/1, and the civil action case name and case number of this action in the Eastern District of Pennsylvania. The costs of such EFT shall be the responsibility of Sunoco. Payment shall be made in accordance with instructions provided to Sunoco by

the Financial Litigation Unit of the United States Attorney's Office for the Eastern District of Pennsylvania. Any funds received after 11:00 a.m. (EDT) shall be credited on the next business day. Sunoco shall provide notice of payment, referencing USAO File Number _____, DOJ Case Number 90-5-2-1744/1, and the civil action case name and case number to the Department of Justice and to EPA, as provided in Paragraph 240 ("Notice").

117. Payment of the civil penalty owed to the Commonwealth of Pennsylvania under Paragraph 115 will be made by certified or corporate check made payable to the "Commonwealth of Pennsylvania Clean Air Fund," and sent to the following address:

Air Quality Compliance Specialist
PA Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

118. Payment of the civil penalty owed to the City of Philadelphia under Paragraph 115 will be made by certified or corporate check made payable to "The City of Philadelphia," and sent to the following address:

Patrick K. O'Neill Esq.
Divisional Deputy City Solicitor, Environmental Law
City of Philadelphia Law Dept.
One Parkway Bldg. 16th Floor
1515 Arch Street
Philadelphia, PA 19102

119. Payment of the civil penalty owed to the State of Oklahoma under Paragraph 115 will be made by certified or corporate check made payable to the "Oklahoma Department of Environmental Quality," and sent to the following address:

Oklahoma Department of Environmental Quality
Finance and Human Resources Management
P.O. Box 2036

Oklahoma City, OK 73101
Attention: Accounts Receivable

120. Pursuant to and in accordance with R.C. 3704.06, Sunoco is enjoined and ordered to pay a total civil penalty of $50,000.00 to the State of Ohio. In lieu of paying this penalty, Sunoco shall pay an amount not to exceed $50,000 to a document conversion vendor acceptable to Ohio EPA to convert the existing hard copy air pollution Ohio State Implementation Plan documentation into a searchable database (Access, Oracle, etc.) of all SIP-related documents along with TIF or other scanned format of the originals to an electronic format that can be accessed by the public, and updated by Ohio EPA on an on-going basis, as set forth in Paragraph 109 above.

121. On Date of Entry of this Consent Decree, this Consent Decree shall constitute an enforceable judgment for purposes of post-judgment collection in accordance with Federal Rule of Civil Procedure 69, the Federal Debt Collection Procedure Act, 28 U.S.C. §§ 3001-3308, and other applicable federal authority. The United States shall be deemed a judgment creditor for purposes of collecting any unpaid amounts of the civil and stipulated penalties and interest.

XI. STIPULATED PENALTIES

122. Sunoco shall pay stipulated penalties to the United States and to the Appropriate Plaintiff/Intervenor for each failure by Sunoco to comply with the terms of this Consent Decree as provided in Paragraph 193. Stipulated penalties shall be calculated in the amounts specified in this Section. Stipulated penalties under Paragraphs 124, 127, 129, and 131 shall not start to accrue until there is noncompliance with the concentration-based, rolling average emission limits identified in those Paragraphs for five percent (5%) or more of the applicable unit's operating time during

any calendar quarter. For those provisions where a stipulated penalty is calculated on a per unit (e.g., CEMS, heater, FCCU) basis, the calculation includes only noncompliant units. For those provisions where a stipulated penalty of either a fixed amount or 1.2 times the economic benefit of delayed compliance is available, the decision of which alternative to seek shall rest exclusively within the discretion of the United States or the Appropriate Plaintiff/Intervenor. Where a single event triggers more than one stipulated penalty provision in this Consent Decree, only the higher of the individual stipulated penalties shall apply. The United States will elect between seeking stipulated penalties under this Consent Decree and commencing a new action for civil penalties under the Clean Air Act where a violation of the Consent Decree is also a violation of the Clean Air Act or its implementing regulations. The Appropriate Plaintiff/Intervenor will elect between seeking stipulated penalties under this Consent Decree and commencing a new action for civil penalties under the Clean Air Act or applicable state or local law where a violation of the Consent Decree is also a violation of the Clean Air Act or applicable state or local law.

A. Non-Compliance with Requirements for NO_x Emission Reductions from FCCUs.

123. For failure to install each application of SCR at Philadelphia 1232 FCCU, Marcus Hook FCCU, and Toledo FCCU as required by Paragraph 11 of this Consent Decree, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,250
31st through 60th day after deadline	$3,000

Beyond 60th day after deadline	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

124. For failure to meet any emissions limit for NO_x referenced in Paragraph 12, per day, per unit: $750 for each calendar day in a calendar quarter on which the short-term rolling average exceeds the applicable limit; and $2,500 for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

125. For failure to install, certify, calibrate, maintain, and/or operate a NO_x CEMS, as required by Paragraph 13, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
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

B. Non-Compliance with Requirements for SO_2 Emission Reductions from FCCUs.

126. For failure to install each application of WGS at Philadelphia 1232 FCCU, Marcus Hook FCCU, and Toledo FCCU, as required by Paragraph 14 of this Consent Decree, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,250

31st through 60th day after deadline	$3,000
Beyond 60th day after deadline	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

127. For each failure to meet SO_2 emission limits set forth in Paragraph 15.a (Philadelphia 1232 FCCU, Marcus Hook FCCU, and Toledo FCCU), per unit: $750/day 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.

128. For failure to install, certify, calibrate, maintain, and/or operate a SO_2 CEMS as required by Paragraph 15.b and 15.c, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
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

C. Non-Compliance with Requirements for PM Emissions from FCCUs.

129. For each failure to meet applicable PM emission limits for Sunoco FCCUs as set forth in Paragraphs 16 and 17, or as later accepted by Sunoco pursuant to Paragraph 219, per day, per unit: $1,500/day for each calendar day in a calendar quarter on which the Refinery exceeds the emission limit.

130. For failure to install, certify, calibrate, maintain, and/or operate a COMS to monitor opacity as required by Paragraph 18 per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
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

D. Non-Compliance with Requirements for CO Emissions from FCCUs.

131. For each failure to meet the applicable CO emission limits for the Sunoco FCCUs as set forth in Paragraphs 19 or 20, or as later accepted by Sunoco pursuant to Paragraph 218: $750/day for each calendar day in a calendar quarter on which the specified 1-hour rolling average exceeds the applicable limit; and $2,500/day for each calendar day in a calendar quarter on which the specified 365-day rolling average exceeds the applicable limit.

132. For failure to install, certify, calibrate, maintain, and/or operate a CO CEMS as required by Paragraph 21, per unit, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
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

E. Failure to Commence Shutdown to Tie-in the SCR and/or WGS at the Marcus Hook FCCU by June 15, 2010.

133. For failure to commence shutdown to tie-in the SCR and/or WGS at the Marcus Hook FCCU by June 15, 2010, per day:

Period of Delay	Penalty per day
06.15.10 to 06.19.11	$1,800
06.20.11 to 06.24.12	$1,900
06.25.12 to 06.29.13	$2,000

The above penalty shall end once the shutdown to tie-in the SCR and/or WGS at the Marcus Hook FCCU commences.

F. Non-Compliance with Requirements for NO_x Emission Reductions from Heaters and Boilers.

134. For failure to install Qualifying Controls on heaters and boilers and/or to submit permit applications sufficient to comply with the requirements of Paragraphs 27 and 29, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$2,500
31st through 60th day after deadline	$6,000
Beyond 60th day after deadline	$10,000, or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

135. For failure to install NO_x controls on heaters and boilers as required by Paragraph 30, by the date set forth in that Paragraph, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$2,500
31st through 60th day after deadline	$6,000

Beyond 60th day after deadline	$10,000, or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater.

136. For failure to submit the report required by Paragraph 29 and/or failure to submit a Control Plan and Updates in accordance with Paragraph 31, per day:

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

137. For failure to conduct a performance test, to install, calibrate, maintain, and/or operate a CEMS in accordance with Paragraphs 32 and 33, per CEMS, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$500
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

138. For each failure to meet NO_x emission limits accepted by Sunoco pursuant to Paragraph 27, per day, per unit: $500 for each calendar day in a calendar quarter on which the emissions exceed the applicable limit.

G. Non-Compliance with Requirements for SO_2 Emission Reductions from Heaters and Boilers.

139. For burning any fuel gas that contains H_2S in excess of the applicable requirements of NSPS Subparts A and J in one or more heaters or boilers or other

identified equipment listed in Appendix D ("NSPS Subpart J Compliance Schedule for Heaters and Boilers") after the date set forth in this Decree on which the respective unit becomes an "affected facility" subject to NSPS Subparts A & J, per event, per day in a calendar quarter:

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

140. For failure to cease fuel oil burning as required by Paragraph 36, by each date specified in Appendix E of this Consent Decree, per unit, per day:

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

141. For failure to comply with the deadline in Paragraph 39 of this Consent Decree, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,250
31st through 60th day after deadline	$3,000
Beyond 60th day after deadline	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

H. Non-Compliance with Requirements for NSPS Applicability to Sulfur Recovery Plants.

142. For failure to route all sulfur pit emissions in accordance with the requirements of Paragraph 45, 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

143. For failure to comply with the NSPS Subpart J emission limits at the Marcus Hook or Philadelphia SRPs, 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
Beyond 60th day	$3,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

144. For failure to comply with the monitoring requirements of Paragraphs 42.b and 43.b.i, per unit, per day:

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	$2,000

145. For failure to propose or comply with the emissions limits for the Toledo SRP as set forth in Paragraph 43.b.iii and b.iv:

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

146. For failure to submit the Optimization Study, as specified in Paragraph 43, per day:

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

147. For failure to install TGUs by the deadline required by Paragraph 43.a, per day:

Period of Delay	Penalty per day
1st through 30th day after deadline	$2,000
31st through 60th day after deadline	$3,000
Beyond 60th day after deadline	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

148. For failure to submit and comply with the Preventive Maintenance and Operation Plan as specified in Paragraph 47.a, per refinery, per day:

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

149. For failure to provide any written deliverable required by Section V.I, other than the Optimization Study and the PMO Plans, per deliverable, per day:

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

I. Non-Compliance with Requirements for NSPS Applicability of Flaring Devices.

150. For failure to comply with NSPS Subpart J at the flares listed in Appendix G after the date on which Sunoco has accepted NSPS applicability for the relevant flare as set forth in Paragraph 48:

Period of Delay	Penalty per day
1st through 30th day	$500
31st through 60th day	$1,500
Beyond 60th day	$2,000

151. For failure to timely submit the NSPS Subpart J compliance report as required by Paragraph 48:

Period of Delay	Penalty per day
1st through 30th day	$500
31st through 60th day	$1,500
Beyond 60th day	$2,000

J. Non-Compliance with Requirements for Control of Acid Gas Flaring Incidents and Tail Gas Incidents.

152. For AG Flaring Incidents and/or Tail Gas Incidents for which Section V.K makes Sunoco liable for stipulated penalties:

Under Section V.K:

Tons Emitted in Acid Gas Flaring Incident or Tail Gas Incident	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is 3 hours or less; Length of Time of the Tail Gas Incident is 3 hours or less	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is greater than 3 hours but less than or equal to 24 hours; Length of Time of the Tail Gas Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time of Flaring within the Acid Gas Flaring Incident is greater than 24 hours; Length of Time of the Tail Gas Incident is greater than 24 hours
5 Tons or less	$500 per Ton	$750 per Ton	$1,000 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 for each calendar day over which the Acid Gas Flaring Incident or Tail Gas Incident lasts

For purposes of calculating stipulated penalties pursuant to this Paragraph 152, only one cell within the matrix shall apply. Thus, for example, for a Flaring Incident in which the 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 $1,200)]. For purposes of determining which column in the table set forth in this Paragraph applies under circumstances in which Flaring occurs intermittently during a Flaring Incident, the Flaring shall be deemed to commence at the time that the Flaring that triggers the initiation of a Flaring Incident commences, and shall be deemed to terminate at the time of the termination of the last episode of Flaring within the Flaring Incident. Thus, for example, for Flaring within a 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) commences at 1:00 a.m. on Day 2 and ends at 1:30 a.m. on Day 2; and (iv) no further Flaring occurs within the Flaring Incident, the Flaring within the Flaring Incident shall be deemed to last 12.5 hours -- not 1.5 hours -- and the column for Flaring of "greater than 3 hours but less than or equal to 24 hours" shall apply. The same method of calculation shall apply to Tail Gas Incidents.

153. For failure to timely submit any report required by Sections V.K or V.L, or for submitting any report that does not substantially conform to its requirements, per report:

Period of Delay	Penalty per day
1st through 30th day after deadline	$750
31st through 60th day after deadline	$1,500
Beyond 60th day after deadline	$3,000

154. For those corrective action(s) with respect to Acid Gas Flaring, Tail Gas Incidents, or Hydrocarbon Flaring which Sunoco: (a) agrees to undertake following receipt of an objection by EPA pursuant to Paragraph 54; or (b) is required to undertake following dispute resolution, then, from the 91st day after EPA's receipt of Sunoco's report under Paragraph 53 of this Consent Decree until the date that either: (1) a final agreement is reached between EPA and Sunoco regarding the corrective action; or (2) a court order regarding the corrective action is entered, Sunoco shall be liable for stipulated penalties as follows:

a.

Period of Delay	Penalty per day
1st through 120th day	$50
121st through 180th day	$100
181st through 365th day	$300
Beyond 365th day	$3,000

or

b. 1.2 times the economic benefit resulting from Sunoco's failure to implement the corrective action(s).

155. For failure to complete any corrective action with respect to Acid Gas Flaring, Tail Gas Incidents, or Hydrocarbon Flaring under Paragraph 54 of this Decree in accordance with the schedule for such Correction Action agreed to by Sunoco or

imposed on Sunoco pursuant to the dispute resolution provisions of this Decree (with any such extensions thereto as to which EPA and Sunoco may agree in writing), Sunoco shall be liable for stipulated penalties as follows:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,000
31st through 60th day after deadline	$2,000
Beyond 60th day after deadline	$5,000

K. Non-Compliance with Requirements for Control of Hydrocarbon Flaring Incidents.

156. For each failure to perform a Root Cause analysis or submit a written report or perform corrective actions as required by Paragraph 64 for a Hydrocarbon Flaring Incident, per day, per incident:

Period of Delay	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

L. Non-Compliance with Requirements for Benzene Waste NESHAP Program Enhancements.

157. For failure to complete the BWON Compliance Review and Verification Reports as required by Paragraph 67: $7,500 per month, per refinery.

158. For failure to submit a compliance plan for the Tulsa Refinery, if required by Paragraph 68.a.ii, or for failure to implement the compliance plan and/or to certify compliance as required by Paragraphs 68.a.iii. and 68.b, respectively:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,250
31st through 60th day after deadline	$3,000
Beyond 60th day after deadline	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

159. For failure to comply with the requirements set forth in Paragraph 69 for use, monitoring and replacement of carbon canisters: $1,000 per incident of noncompliance, per day.

160. For failure to submit or maintain any records or materials required by Paragraph 69 of this Consent Decree: $2,000 per record or submission.

161. For failure to establish an annual review program to identify new benzene waste streams as required by Paragraph 70: $2,500 per month, per refinery.

162. For failure to perform laboratory audits as required by Paragraph 71: $5,000 per month, per missed audit.

163. For failure to implement the training requirements as set forth in Paragraph 73: $10,000 per quarter, per refinery.

164. For failure to install controls on waste management units handling organic wastes as required by Paragraph 74: $10,000 per month, per waste management unit.

165. For failure to submit any plans or other deliverables required by Paragraph 75, $10,000 per month, per refinery.

166. For failure to conduct sampling in accordance with the sampling plans required by Paragraph 75: $5,000 per week, per stream, or $30,000 per quarter, per

stream, whichever is greater, but not to exceed $150,000 per quarter, per stream, whichever is greater, but not to exceed $150,000 per quarter, per refinery.

167. For failure to conduct monthly visual inspections of all Subpart FF water traps as required by Paragraph 76.b.i: $500 per drain not inspected.

168. For failure to identify/mark segregated storm water drains as required in Paragraph 76.c: $1,000 per week, per drain not identified/marked.

169. For failure to monitor Subpart FF conservation vents as required by Paragraph 76.b.ii: $500 per vent not monitored.

170. For failure to submit the written deliverables required by Paragraph 77: $1,000 per week, per deliverable.

171. If it is determined through federal, state, or local investigation that any Sunoco Refinery has failed to include all benzene waste streams in its TAB calculation submitted pursuant to Paragraph 67, Sunoco shall pay the following, per waste stream:

Waste Stream	Penalty
for waste streams < 0.03 Mg	$250
for waste streams between 0.03 and 0.1 Mg/yr	$1,000
for waste streams between 0.1 and 0.5 Mg/yr	$5,000
for waste streams > 0.5 Mg/yr	$10,000

M. Non-Compliance with Requirements for Leak Detection and Repair Program Enhancements.

172. For failure to develop an LDAR Program as required by Paragraph 78: $3,500 per week, per refinery.

173. For failure to implement the training programs specified in Paragraph 79: $10,000 per month, per program, per refinery.

174. For failure to conduct any of the audits required by Paragraph 80: $5,000 per month, per audit.

175. For failure to implement any actions necessary to correct noncompliance as required by Paragraph 81:

Period of Delay	Penalty per day
1st through 30th day after deadline	$1,250
31st through 60th day after deadline	$3,000
Beyond 60th day after deadline	$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

176. For failure to perform monitoring utilizing the lower internal leak rate definitions as specified in Paragraph 82: $100 per component, but not greater than $10,000 per month, per process unit.

177. For failure to repair and re-monitor leaks, as required by Paragraph 83.b, in excess of the lower leak definitions specified in Paragraph 82: $100 per component, but not greater than $10,000 per month, per refinery (except that Paragraph 178 shall apply in lieu of this Paragraph 177 where both paragraphs are potentially applicable).

178. For failure to implement the "initial attempt" repair program in Paragraph 85: $100 per valve, but not greater than $10,000 per month, per refinery.

179. For failure to implement the quarterly QA/QC procedures described in Paragraph 87: $10,000 per month, per refinery.

180. For failure to implement and comply with the LDAR monitoring program as required by Paragraph 84: $100 per component, but not greater than $10,000 per month, per unit.

181. For failure to use dataloggers or maintain electronic data as required by Paragraph 86: $5,000 per month, per refinery.

182. For failure to designate and/or maintain an individual as accountable for LDAR performance as required in Paragraph 88: $3,750 per week, per refinery.

183. For failure to conduct the calibration drift assessments or remonitor valves and pumps based on calibration drift assessments in Paragraph 89: $100 per missed event, per refinery.

184. For failure to comply with the requirements for repair set forth at Paragraph 90: $5,000 per valve or pump.

185. For failure to submit any written deliverables required by Paragraph 92: $1,000 per week, per report.

186. If it is determined through a federal, state, or local investigation that Sunoco has failed to include all valves and pumps in its LDAR program, Sunoco shall pay $175 per component that it failed to include.

187. For failure to repair chronic leaker valves as required under Paragraph 91, $5000 per valve.

N. Non-Compliance with Requirements for Reporting and Recordkeeping.

188. For failure to submit reports as required by Section IX, beginning on the 7th day past the report's due date, per report, per day:

Period of Delay	Penalty per day
1st through 30th day	$300
31st through 60th day	$1,000
Beyond 60th day	$2,000

O. Non-Compliance with Requirements for Payment of Civil Penalties.

189. For Sunoco's failure to pay the civil penalties as specified in Section X of this Consent Decree, Sunoco shall be liable for $15,000 per day plus interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

P. Non-Compliance with Requirement to Pay Stipulated Penalties.

190. For failure to pay or escrow stipulated penalties as required by Paragraphs 193 and 195 of this Consent Decree, Sunoco shall be liable for $2,500 per day, per penalty, and interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

Q. Non-Compliance with Requirements Related to Supplemental Environmental Projects.

191. For failure to satisfactorily complete implementation of the SCEPs and/or SLEBPs required under Section VIII, per project, per day:

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

R. Non-Compliance with Requirements to Incorporate Consent Decree Requirements into Federally-Enforceable Permits under Section V.O.

192. For each failure to submit an application as required by Section V.O:

Period of Delay	Penalty per day
1st through 30th day after deadline	$800
31st through 60th day after deadline	$1,600
Beyond 60th day	$3,000

S. General Provisions Related to Stipulated Penalties.

193. Sunoco shall pay stipulated penalties upon written demand by the United States, or the Appropriate Plaintiff/Intervenor, no later than 60 days after Sunoco receives such demand. Demand from one agency shall be deemed a demand from all applicable agencies, but the agencies shall consult with each other prior to making a demand. A demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates, the stipulated penalty amount that EPA or the Appropriate Plaintiff/Intervenor is demanding 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/Intervenor may, in their unreviewable discretion, waive payment of all or any portion of stipulated penalties that may accrue under this Consent Decree. Stipulated penalties shall be paid to the United States and Appropriate Plaintiff/Intervenors in the following manner:

194. Payment of Stipulated Penalties. Stipulated penalties owed by Sunoco shall be paid 50% to the United States and 50% to the Appropriate Plaintiff/Intervenor.

Stipulated penalties owed by Sunoco for SCEPs shall be paid 50% to the United States and 50% to the Appropriate Plaintiff/Intervenor. Stipulated penalties owed by Sunoco for SLEBPs shall be paid to the Appropriate Plaintiff/Intervenor. Stipulated penalites owing to the United States of under $10,000 will be paid by check and made payable to "U.S. Department of Justice," referencing DOJ Case Number 90-5-2-1744/1 and USAO File Number _____, and delivered to **[the U.S. Attorney's Office]**. Stipulated penalties owing to the United States of $10,000 or more and stipulated penalties owing to a Plaintiff/Intervenor will be paid in the manner set forth in Section X (Civil Penalty) of this Consent Decree. Stipulated penalties owing to the State of Ohio will be paid by cashier's or certified check payable to the "Order of Treasurer, State of Ohio," and sent to Amy Laws, Paralegal, or her successor, Paralegal, Office of the Attorney General of Ohio, Environmental Enforcement Section, 30 East Broad Street, 25th Floor, Columbus, Ohio 43215-3400. The memo portion of the check, or some other prominent location on the transmittal letter or documentation, shall include a reference to "A.G. EAGO No. 283198."

T. <u>Stipulated Penalties Dispute</u>.

195. Should Sunoco dispute the United States' and/or a Plaintiff/Intervenor's demand for all or part of a stipulated penalty, it may avoid the imposition of a stipulated penalty for failure to pay a stipulated penalty under Paragraph 190 by placing the disputed amount demanded in a commercial escrow account pending resolution of the matter and by invoking the dispute resolution provisions of Section XV within the time provided in Paragraph 193 for payment of stipulated penalties. If the dispute is thereafter resolved in Sunoco's favor, the escrowed amount plus accrued interest shall

be returned to Sunoco; otherwise, EPA and the Appropriate Plaintiff/Intervenor shall be entitled to the amount that was determined to be due by the Court, plus the interest that has accrued in the escrow account on such amount. The United States and the Plaintiff/Intervenors reserve the right to pursue any other non-monetary remedies to which they are legally entitled, including, but not limited to, injunctive relief for Sunoco's violations of this Consent Decree.

XII. INTEREST

196. Sunoco shall be liable for interest on the unpaid balance of stipulated penalties to be paid in accordance with Section XI. All such interest shall accrue at the rate established pursuant to 28 U.S.C. § 1961(a) – i.e., a rate equal to the coupon issue yield equivalent (as determined by the Secretary of Treasury) of the average accepted auction price for the last auction of 52-week U.S. Treasury bills settled prior to the Date of Lodging of the Consent Decree. Interest shall be computed daily and compounded annually. Interest shall be calculated from the date payment is due under the Consent Decree through the date of actual payment. For purposes of this Paragraph 196, interest pursuant to this Paragraph will cease to accrue on the amount of any stipulated penalty payment made into an interest bearing escrow account as contemplated by Paragraph 195 of the Consent Decree. Monies timely paid into escrow shall not be considered to be an unpaid balance under this Section.

XIII. RIGHT OF ENTRY

197. Any authorized representative of EPA or of the applicable Plaintiff/Intervenor, upon presentation of credentials, shall have a right of entry upon the premises of the facilities of the Sunoco Refineries at any reasonable time for the purpose of monitoring compliance with the provisions of this Consent Decree, including

inspecting plant equipment and systems, and inspecting and copying all records maintained by Sunoco required by this Consent Decree or deemed necessary by EPA or the applicable Plaintiff/Intervenor to verify compliance with this Consent Decree. Sunoco shall retain such records for the period of the Consent Decree. Nothing in this Consent Decree shall limit the authority of EPA or the applicable Plaintiff/Intervenor to conduct tests, inspections, or other activities under any statutory or regulatory provision.

XIV. FORCE MAJEURE

198. If any event occurs or fails to occur that causes or may cause a delay or impediment to performance in complying with any provision of this Consent Decree, Sunoco shall notify EPA and the Appropriate Plaintiff/Intervenor in writing as soon as practicable, but in any event within ten (10) business days of the date when Sunoco first knew of the event or should have known of the event by the exercise of due diligence. In this notice, Sunoco shall specifically reference this Paragraph 198 of this Consent Decree 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 Sunoco to prevent or minimize the delay and the schedule by which those measures shall be implemented. Sunoco shall take all reasonable steps to avoid or minimize such delays. The notice required by this Section shall be effective upon the mailing of the same by certified mail, return receipt requested, to the Applicable EPA Regional Office as specified in Paragraph 240 ("Notice").

199. Failure by Sunoco to substantially comply with the notice requirements of Paragraph 198 as specified above shall render this Section XIV voidable by the United States, in consultation with the Appropriate Plaintiff/Intervenor, as to the specific event

for which Sunoco has failed to comply with such notice requirement, and, if voided, is of no effect as to the particular event involved.

200. The United States, after consultation with the Appropriate Plaintiff/Intervenor, shall notify Sunoco in writing regarding its claim of a delay or impediment to performance within 30 days of receipt of the *force majeure* notice provided under Paragraph 198.

201. If the United States, after consultation with the Appropriate Plaintiff/Intervenor, agrees that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Sunoco including any entity controlled by Sunoco and that Sunoco could not have prevented the delay by the exercise of due diligence, the appropriate Parties shall stipulate in writing to an extension of the required deadlines(s) for all requirement(s) affected by the delay by a period equivalent to the delay actually caused by such circumstances. Such stipulation shall be treated as a non-material modification to the Consent Decree pursuant to the modification procedures established in this Consent Decree. Sunoco shall not be liable for stipulated penalties for the period of any such delay.

202. If the United States, after consultation with the Appropriate Plaintiff/Intervenor, does not accept Sunoco's claim of a delay or impediment to performance, Sunoco must submit the matter for resolution by filing a petition with the Federal District Court to avoid payment of stipulated penalties. Once Sunoco has submitted this matter to the Court, the United States and the Appropriate Plaintiff/Intervenor shall have twenty (20) business days to file their responses to the petition. If the Court determines that the delay or impediment to performance has been

or will be caused by circumstances beyond the control of Sunoco including any entity controlled by Sunoco and that the delay could not have been prevented by Sunoco by the exercise of due diligence, Sunoco shall be excused as to that event(s) and delay (including stipulated penalties), for a period of time equivalent to the delay caused by such circumstances.

203. Sunoco shall bear the burden of proving that any delay of any requirements(s) of this Consent Decree was caused by or will be caused by circumstances beyond its control, including any entity controlled by it, and that it could not have prevented the delay by the exercise of due diligence. Sunoco 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 will not necessarily result in an extension of a subsequent compliance date or dates.

204. Unanticipated or increased costs or expenses associated with the performance of Sunoco's obligations under this Consent Decree shall not constitute circumstances beyond its control, or serve as the basis for an extension of time under this Section XIV.

205. Notwithstanding any other provision of this Consent Decree, the parties do not intend for this Court to draw any inferences nor establish any presumptions adverse to any Party as a result of Sunoco serving a *force majeure* notice or the Parties' inability to reach agreement.

206. As part of the resolution of any matter submitted to this Court under this Section XIV, the appropriate Parties (by agreement), or the Court (by order), may extend or modify the schedule for completion of work under the Consent Decree 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 or approved by this Court. Sunoco shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XV. RETENTION OF JURISDICTION/DISPUTE RESOLUTION

207. This Court shall retain jurisdiction of this matter for the purposes of implementing and enforcing the terms and conditions of the Consent Decree and for the purpose of adjudicating all disputes (including, but not limited to, determinations under Section V ("Affirmative Relief/Environmental Projects") of the Consent Decree) between the United States and the Plaintiff/Intervenors and Sunoco that may arise under the provisions of the Consent Decree, until the Consent Decree terminates in accordance with Section XVIII of this Consent Decree ("Termination").

208. The dispute resolution procedure set forth in this Section XV shall be available to resolve any and all disputes arising under this Consent Decree, provided that the Party making such application has made a good faith attempt to resolve the matter with the other Party.

209. The dispute resolution procedure required herein shall be invoked upon the giving of written notice by one of the Parties to this Consent Decree to another advising the other appropriate Party(ies) of a dispute pursuant to this Section XV. The notice shall describe the nature of the dispute, and shall state the noticing Party's position with regard to such dispute.

210. 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 90 calendar days from the date of the first meeting

between representatives of the Parties, unless it is agreed that this period should be extended.

211. In the event that the Parties are unable to reach agreement during such informal negotiation period, the United States or the Appropriate Plaintiff/Intervenor, as applicable, shall provide Sunoco with a written summary of its position regarding the dispute. The position advanced by the United States or the Appropriate Plaintiff/Intervenor, as applicable, shall be considered binding unless, within 45 calendar days of Sunoco's receipt of the written summary of the United States' or the Appropriate Plaintiff/Intervenor's position, Sunoco files with the Court a petition that describes the nature of the dispute. The United States or the Appropriate Plaintiff/Intervenor shall respond to the petition within 45 calendar days of filing. In resolving the dispute between the parties, the position of the United States and the Appropriate Plaintiff/Intervenor shall be upheld if supported by substantial evidence in the administrative record.

212. In the event that the United States and the Appropriate Plaintiff/Intervenor make differing determinations or take differing actions that affect Sunoco's rights or obligations under this Consent Decree, the final decisions of the United States shall take precedence.

213. Where the nature of the dispute is such that a more timely resolution of the issue is required, the time periods set forth in this Section XV may be shortened upon motion of one of the Parties to the dispute.

214. The Parties do not intend that the invocation of this Section XV by a Party cause the Court to draw any inferences nor establish any presumptions adverse to either Party as a result of invocation of this Section.

215. As part of the resolution of any dispute submitted to dispute resolution, the Parties, by agreement, or this Court, by order, may, in appropriate circumstances, extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of dispute resolution. Sunoco shall be liable for stipulated penalties for their failure thereafter to complete the work in accordance with the extended or modified schedule.

XVI. EFFECT OF SETTLEMENT

216. **Definitions**. For purposes of this Section XVI, 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), Part 51 Appendix S, and 52.24; any Title V regulations that implement, adopt, or incorporate the specific regulatory requirements identified above; any applicable 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 enforceable by Plaintiff/Intervenors 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 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 enforceable by Plaintiff/Intervenors that implement, adopt, or incorporate the specific federal regulatory requirements identified above.

c. "Post-Lodging Compliance Dates" shall mean any dates in this Section XVI ("Effect of Settlement") after the Date of Lodging. 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 Consent Decree.

217. **Resolution of Liability Regarding the Applicable NSR/PSD Requirements**. With respect to emissions of the following pollutants from the following units, entry of this Consent Decree shall resolve all civil liability (including any continuing liability, until the Post-Lodging Compliance Dates) of Sunoco to the United States and the Plaintiff/Intervenors for violations of the Applicable NSR/PSD Requirements resulting from pre-Lodging construction or modification:

Refinery/Unit	Pollutant	Post-Lodging Compliance Date
Marcus Hook FCCU	NO_x	6.30.13
	SO_2	6.30.13
Toledo FCCU	NO_x	12.31.09
	SO_2	12.31.09
Philadelphia 1232 FCCU	NO_x	06.30.08
	SO_2	06.30.08
Philadelphia 868 FCCU	CO	Date of Entry
Heaters and boilers on which Qualifying Controls are installed and which are used to satisfy the requirements of Paragraph 27	NO_x	Later of Date of Entry or date of installation of Qualifying Controls
All other heaters and boilers	NO_x	Date of Entry
All heaters and boilers at Philadelphia and Toledo	SO_2	Date of Entry or dates set forth in Appendix D if other than Date of Entry
All Flaring Devices listed in Appendix G	SO_2	As set forth in Appendix G

218. **Resolution of Liability for CO Emissions under the Applicable NSR/PSD Requirements**. With respect to emissions of CO from the FCCUs at Marcus Hook, Toledo, and Philadelphia 1232, if and when Sunoco 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 (including any continuing liability, until the Post-Lodging Compliance Dates) of Sunoco to the United States and the Plaintiff/Intervenors 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.

219. **Resolution of Liability for PM Emissions under the Applicable NSR/PSD Requirements**. With respect to emissions of PM from the FCCUs at Marcus Hook, Toledo, and Philadelphia 868 and 1232, if and when Sunoco accepts and demonstrates compliance with an emission limit of 0.5 pounds PM per 1000 pounds of coke burned at the relevant Refinery, then all civil liability (including any continuing liability, until the Post-Lodging Compliance Dates) of Sunoco to the United States and the Plaintiff/Intervenors 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.

220. **Reservation of Rights Regarding Applicable NSR/PSD Requirements: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void**. Notwithstanding the resolution of liability in Paragraphs 217-219, the releases of liability by the United States and the Plaintiff/Intervenors to Sunoco for violations of the Applicable NSR/PSD Requirements shall be rendered void if Sunoco materially fails to comply with the obligations and requirements of Sections V.A-V.E (relating to FCCUs) of this Consent Decree; provided, however, that the releases in Paragraphs 217-219 shall

not be rendered void if Sunoco remedies such material failure and pays any stipulated penalties due as a result of such material failure.

221. **Exclusions from Release Coverage Regarding Applicable PSD/NSR Requirements: Construction and/or Modification Not Covered by Paragraphs 217-219**. Notwithstanding the resolution of liability in Paragraphs 217-219, nothing in this Consent Decree precludes the United States and/or the Plaintiff/Intervenors from seeking from Sunoco injunctive relief, penalties, or other appropriate relief for violations by Sunoco of the Applicable NSR/PSD Requirements resulting from: (1) construction or modification that commenced prior to the Date of Lodging of the Consent Decree, if the resulting violations relate to pollutants or units not covered by the Consent Decree; or (2) any construction or modification that commences after the Date of Lodging of the Consent Decree.

222. **Evaluation of Applicable PSD/NSR Requirements**. Increases in emissions from units covered by this Consent Decree, where the increases result from the Post-Lodging construction or modification of any units within the Sunoco Refineries, are beyond the scope of the release in Paragraphs 217-219, and Sunoco is not relieved from any obligation to evaluate any such increases in accordance with the Applicable PSD/NSR Requirements.

223. **Resolution of Liability Regarding Applicable NSPS Subparts A and J Requirements**. With respect to emissions of the following pollutants from the following units, entry of this Consent Decree shall resolve all civil liability (including any continuing liability, until the Post-Lodging Compliance Dates) of Sunoco to the United States and the Plaintiff/Intervenors for violations of the Applicable NSPS

Subparts A and J Requirements resulting from pre-Lodging construction or modification:

Refinery/Unit	Pollutant	Post-Lodging Compliance Date
Marcus Hook FCCUCR	SO_2	Date of Entry
	PM	Date of Entry
	CO	Date of Entry
	Opacity	Date of Entry
Toledo FCCUCR	SO_2	12.31.09
	PM	Date of Entry
	CO	Two years from Date of Entry
	Opacity	12.31.09
Philadelphia 1232 FCCUCR	SO_2	06.30.08
	PM	Date of Entry
	CO	Date of Entry
	Opacity	Date of Entry
Philadelphia 868 FCCUCR	SO_2	Date of Entry
	PM	Date of Entry
	CO	Date of Entry
	Opacity	Date of Entry
All heaters and boilers at Philadelphia and Toledo	SO_2	Date of Entry (or date set forth in Appendix D if other than Date of Entry)
All Flaring Devices	SO_2	Date on which Sunoco certifies compliance with NSPS Subpart J for the relevant Flaring Device pursuant to Paragraph 48
Philadelphia SRPs	SO_2	Date of Entry
Marcus Hook SRPs	SO_2	Date of Entry
Toledo SRPs	SO_2	12.31.09

224. **Reservation of Rights Regarding Applicable NSPS Subparts A and J Requirements: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void**. Notwithstanding the resolution of liability in Paragraph 223, the releases of liability by the United States and the Plaintiff/Intervenors to Sunoco for violations of the Applicable NSPS Subparts A and J Requirements shall be rendered void if Sunoco materially fails to comply with the obligations and requirements of Section V (relating to NSPS requirements) of this Consent Decree; provided, however, that the releases in Paragraph 223 shall not be rendered void if Sunoco remedies such material failure and pays any stipulated penalties due as a result of such material failure.

225. **Prior NSPS Applicability Determinations**. Nothing in this Consent Decree 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.

226. **Resolution of Liability Regarding Benzene Waste NESHAP Requirements**. Entry of this Consent Decree shall resolve all civil liability of Sunoco to the United States and the Plaintiff/Intervenors for violations of the statutory and regulatory requirements set forth below in subparagraphs a through c (the "BWON Requirements") that (1) commenced and ceased prior to the Date of Lodging of the Consent Decree; and (2) commenced prior to the Date of Lodging of the Consent Decree and/or continued past the Date of Lodging, provided that the events giving rise to such post-Lodging violations are identified by Sunoco in its BWON Compliance Review and Verification Report(s) submitted pursuant to Paragraph 67 and corrected by Sunoco as required under Paragraph 68:

a. 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 that adopts or incorporates the requirements of Subpart FF by express reference, but only to the extent of such adoption or incorporation; and

b. Any applicable, federally-enforceable state or local regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 226.a above.

c. Any applicable state or local regulations enforceable by the Plaintiff/Intervenors that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 226.a above.

227. **Resolution of Liability Regarding LDAR Requirements**. Entry of this Consent Decree shall resolve all civil liability of Sunoco to the United States and the Plaintiff/Intervenors 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 Lodging of the Consent Decree; and (2) commenced prior to the Date of Lodging of the Consent Decree and continued past the Date of Lodging, provided that the events giving rise to such post-Lodging violations are identified by Sunoco in its Initial Third-Party Audit Report(s) submitted pursuant to Paragraph 80 and corrected by Sunoco as required under Paragraph 81.

a. LDAR Requirements. For all equipment in light liquid service and gas and/or vapor service, the LDAR requirements of Plaintiff/Intervenors 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 227.a above.

c. Any applicable state or local regulations or permits enforceable by the Plaintiff/Intervenors that implement, adopt, or incorporate the specific regulatory requirements identified in Paragraph 227.a above.

228. **Reservation of Rights Regarding Benzene NESHAP and LDAR Requirements**. Notwithstanding the resolution of liability in Paragraphs 226 and 227, nothing in this Consent Decree precludes the United States and/or the Plaintiff/Intervenors from seeking from Sunoco injunctive and/or other equitable relief or civil penalties for violations by Sunoco of Benzene Waste NESHAP and/or LDAR requirements that (1) commenced prior to the Date of Lodging of this Consent Decree and continued after the Date of Lodging if Sunoco fails to identify and address such violations as required by Paragraphs 68 and 81 of this Consent Decree; or (2) commenced after the Date of Lodging of the Consent Decree.

229. **Other**. In addition to the releases identified above, and, if applicable, subject to all reservations of rights set forth in this Section XVI, entry of this Consent Decree shall resolve all civil liability of Sunoco to the United States, PADEP, and AMS for the following alleged violations of the Clean Air Act, Pennsylvania Air Pollution Control Act, and Philadelphia local air regulations: (1) NOV issued on or about 9.8.00

as a result of a fire at the 860 reformer on or about June 30, 2000; (2) NOV issued on or about 9.8.00 as a result of a fire at the 210 crude unit on or about September 7, 2000; (3) NOV issued on or about 9.8.00 regarding process upset at the 868 FCCU on or about June 21, 2000; (4) NOV issued on or about 9.13.00 for alleged SO_2 concentration exceedances and excess CEM downtime at the 867 unit; (5) NOV issued on or about 5.18.01 for FCCU rate exceedances on 8.12-13.00 and 2.8-9.01; (6) NOV issued on or about 7.26.01 for alleged SO_2 emission limit exceedances at the 867 unit; (7) NOV issued on or about 9.28.01for late submittal and alleged discrepancies in refinery emission inventory and statement for the year 2000; (8) NOV issued on or about 10.5.01 regarding alleged violation of carbon canister requirements under the benzene NESHAP; (9) NOV issued on or about 8.5.02 regarding alleged violation of carbon canister requirements under the benzene NESHAP; (10) NOV issued on or about 10.20.02 regarding alleged violation of carbon canister requirements under the benzene NESHAP; (11) NOV issued on or about 11.5.02 for the Philadelphia Refinery as a result of an AMS audit, including failure to comply with the plan approval for 433 H-1 heater and stack test, failure to comply with source testing procedures, and failure to report certain actual emissions in the emission inventory for 2001; (12) all NOVs for opacity exceedances from 4.24.98 to 7.24.03; (13) all NOVs for malodors detected beyond the property line of the Philadelphia Refinery from 12.4.98 to 3.12.03; (14) NOV issued on or about 2.10.03 regarding treatment of sour water stripper gas at 1232 and 867 units; (15) NOV issued on or about 8.27.03 for alleged SO_2 concentration exceedances at the 867 unit and failure to submit the 2002 Title V annual certification; (16) NOV issued on or about 1.20.04 for alleged discrepancies in refinery emission inventories and

statements for 2000-2002; (17) NOV issued on or about 1.30.04 regarding stipulated penalties under a consent decree for a deNO_x additive trial at the 868 FCCU; (18) NOV issued on or about 8.20.04 regarding deviations identified in Sunoco's Title V semi-annual monitoring reports (8.20.04); (19) Notice of Violation regarding NO_x RACT exceedances at H-400/401 during periods in 2001 through 2003 (12.30.04); (20) the assertions in the NOV issued on or about 3.18.05 regarding violations of the PSD and NSR requirements at the Marcus Hook 10-Plant FCCU and 15-Plant Boilers Nos. 5, 6, 7, and 9; (21) NOV issued on or about 5.16.05 regarding deviations identified by Sunoco in its Title V annual compliance certifications and semi-annual deviation reports and deviations discovered by AMS from CEM and emission inventory data; (22) the assertion that the Philadelphia Refinery and the Belmont Terminal are interdependent or support facilities and the emissions should have been grouped together and reported as Philadelphia Refinery's emissions prior to the date this Consent Decree is signed by AMS; (23) any deviations identified by Sunoco in its Title V annual compliance certifications and semi-annual deviation reports for the Philadelphia Refinery filed 2002-2005 (prior to the date this Consent Decree is signed by AMS); (24) alleged violations associated with Sunoco's reports to AMS of startup, shutdown, and malfunction emissions (prior to the date this Consent Decree is signed by AMS); and (25) alleged violations of Pennsylvania's SIP as a result of (a) a catalyst release from the Philadelphia Refinery in June 2000, (b) a fire at the Philadelphia Refinery in June 2000, (c) a fire at the Philadelphia Refinery in September 2000, and (d) a fire at the Philadelphia Refinery in January 2005.

230. **Audit Policy**. Nothing in this Consent Decree is intended to limit or disqualify Sunoco, 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 noncompliance that Sunoco discovers during the course of any investigation, audit, or enhanced monitoring that Sunoco is required to undertake pursuant to this Consent Decree.

231. **Claim/Issue Preclusion**. In any subsequent administrative or judicial proceeding initiated by the United States or the Plaintiff/Intervenors for injunctive relief, penalties, or other appropriate relief relating to Sunoco for violations of the PSD/NSR, NSPS, NESHAP, and/or LDAR requirements not identified in Section XVI ("Effect of Settlement") of the Consent Decree:

a. Sunoco shall not assert, and may not maintain, in any subsequent administrative, civil, or criminal action commenced by the United States or the Plaintiff/Intervenors, any defense or claim based upon the principles of waiver, *res judicata*, collateral estoppel, issue preclusion, or claim-splitting. Nor may Sunoco assert, or maintain, any other defenses based upon any contention that the claims raised by the United States or the Plaintiff/Intervenors in the subsequent proceeding should have been brought in the instant case. Nothing in the preceding sentences is intended to affect the ability of Sunoco to assert that the claims are deemed resolved by virtue of Section XVI of the Consent Decree.

b. Except as set forth in Paragraph 231.a, above, the United States and the Plaintiff/Intervenors may not assert or maintain that this Consent Decree constitutes a waiver or determination of, or otherwise obviates, any claim or defense whatsoever, or

that this consent Decree constitutes acceptance by Sunoco of any interpretation or guidance issued by EPA or the Plaintiff/Intervenors related to the matters addressed in this Consent Decree.

232. **Imminent and Substantial Endangerment**. Nothing in this Consent Decree shall be construed to limit the authority of the United States and the Plaintiff/Intervenors to undertake any action against any person, including Sunoco, to abate or correct conditions which may present an imminent and substantial endangerment to the public health, welfare, or the environment.

XVII. GENERAL PROVISIONS

233. **Other Laws**. Except as specifically provided by this Consent Decree, nothing in this Consent Decree shall relieve Sunoco of its obligations 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 Consent Decree shall prohibit or prevent the United States or Plaintiff/Intervenors from developing, implementing, and enforcing more stringent standards subsequent to the Date of Lodging of this Consent Decree through rulemaking, the permit process, or as otherwise authorized or required under federal, state, or local laws and regulations. Subject to Section XVI ("Effect of Settlement") and Paragraphs 122 and 234 of this Consent Decree, nothing contained in this Consent Decree shall be construed to prevent or limit the rights of the United States or the Plaintiff/Intervenors to seek or obtain other remedies or sanctions available under other federal, state, or local statutes or regulations, by virtue of Sunoco's violation of the Consent Decree or of the statutes and regulations upon which the Consent Decree is based, or for Sunoco's violations of any applicable provision of law. This shall include the right of the United States or the Plaintiff/Intervenors to invoke the authority of the

Court to order Sunoco's compliance with this Consent Decree in a subsequent contempt action. The requirements of this Consent Decree do not exempt Sunoco from complying with any and all new or modified federal, state, and/or local statutory or regulatory requirements that may require technology, equipment, monitoring, or other upgrades after the Date of Lodging of this Consent Decree.

234. **Post-Permit Violations**. Nothing in this Consent Decree shall be construed to prevent or limit the right of the United States or the Plaintiff/Intervenors to seek injunctive or monetary relief for violations of limits that have been incorporated into permits pursuant to this Consent Decree; provided, however, that with respect to monetary relief, the United States and the Plaintiff/Intervenors must elect between filing a new action for such monetary relief or seeking stipulated penalties under this Consent Decree, if stipulated penalties also are available for the alleged violation(s).

235. **Failure of Compliance**. The United States and the Plaintiff/Intervenors do not, by their consent to the entry of the Consent Decree, warrant or aver in any manner that Sunoco's complete compliance with the Consent Decree will result in compliance with the provisions of the CAA or the state statutes and regulations identified in Paragraph 9. Notwithstanding the review or approval by EPA or the Plaintiff/Intervenors of any plans, reports, policies or procedures formulated pursuant to the Consent Decree, Sunoco shall remain solely responsible for compliance with the terms of the Consent Decree (except as provided in Section XIV ("*Force Majeure*") and Paragraph 101), with all applicable permits, and with all applicable federal, state, and local laws and regulations.

236. **Service of Process**. Sunoco hereby agrees to accept service of process by mail with respect to all matters arising under or relating to the Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including but not limited to, service of a summons. The persons identified by Sunoco at Paragraph 240 ("Notice") are authorized to accept service of process with respect to all matters arising under or relating to the Consent Decree.

237. **Costs**. Each Party to this action shall bear its own costs and attorneys' fees.

238. **Public Documents**. All information and documents submitted by Sunoco to EPA and the Appropriate Plaintiff/Intervenors pursuant to this Consent Decree shall be subject to public inspection in accordance with the respective statutes and regulations that are applicable to EPA and the Plaintiff/Intervenors, unless subject to legal privileges or protection or identified and supported as trade secrets or business confidential in accordance with the respective state or federal statutes or regulations.

239. **Public Notice and Comment**. The Parties agree to the Consent Decree and agree that the Consent Decree may be entered upon compliance with the public notice procedures set forth at 28 C.F.R. § 50.7, and upon notice to this Court from the United States Department of Justice requesting entry of the Consent Decree. The United States reserves the right to withdraw or withhold its consent to the Consent Decree if public comments disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate.

240. **Notice**. Unless otherwise provided herein, notifications to or communications between the Parties shall be deemed submitted on the date they are postmarked and sent by U.S. Mail, postage prepaid, except for notices under Section XIV ("*Force Majeure*") and Section XV ("Retention of Jurisdiction/Dispute Resolution") which shall be sent by overnight mail or by certified or registered mail, return receipt requested. Each report, study, notification, or other communication of Sunoco shall be submitted as specified in this Consent Decree, with copies to EPA Headquarters and the applicable EPA Region and the applicable Plaintiff/Intervenor. If the date for submission of a report, study, notification, or other communication falls on a Saturday, Sunday, or legal holiday, the report, study, notification, or other communication will be deemed timely if it is submitted the next business day. Except as otherwise provided herein, all reports, notifications, certifications, or other communications required or allowed under this Consent Decree to be submitted or delivered to the United States, EPA, the Plaintiff/Intervenors, and Sunoco 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
Reference Case No. 90-5-2-1-1744/1

As to EPA:
Director, Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency
Mail Code 22452-A

1200 Pennsylvania
Avenue, N.W.
Washington, DC 20460-0001

with a hard copy to
Director, Air Enforcement Division
Office of Civil Enforcement
c/o Matrix Environmental & Geotechnical Services
215 Ridgedale Avenue
Florham Park, NJ 07932
and an electronic copy to
neichlin@matrixengineering.com
Jackson.james@epa.gov
foley.patrick@epa.gov

EPA Regions:

U.S. EPA Region III:
1650 Arch Street
Philadelphia, PA 19103

U.S. EPA Region V:
77 W. Jackson Blvd.
Chicago, IL 60604

U.S. EPA Region VI:
1445 Ross Ave.
Dallas, TX 75202

Plaintiff/Intervenors:

Pennsylvania Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17105

Philadelphia Air Management Service
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Oklahoma Department of Environmental Quality
707 N. Robinson
Oklahoma City, OK 73102

Ohio Environmental Protection Agency
122 S. Front Street
Columbus, OH 43215

As to Sunoco:

All communications to Sunoco shall be addressed to:

General Counsel - Sunoco
1735 Market Street 28th Floor
Philadelphia, PA 19103

Environmental Manager - Northeast Refining Complex
100 Green Street
P.O. Box 426
Marcus Hook, PA 19061

With a copy to each affected Refinery:

Vice President Northeast Refining Complex for Marcus Hook and Philadelphia
100 Green Street
P.O. Box 426
Marcus Hook, PA 19061

Vice President Mid-Continent Refining Complex for Toledo and Tulsa
Sunoco, Inc. (R&M) Toledo Refinery
1819 Woodville Road
Oregon, Ohio 43616

Facility Manager - Marcus Hook Refinery
100 Green Street
P.O. Box 426
Marcus Hook, PA 19061

Facility Manager - Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA 19134

Facility Manager - Toledo Refinery
1819 Woodville Road
Oregon, Ohio 43616

Facility Manager - Tulsa Refinery
1700 South Union
Tulsa, OK 74107

Any party may change either the notice recipient or the address for providing notices to it by serving all other parties with a notice setting forth such new notice recipient or address. In addition, the nature and frequency of reports required by the Consent Decree may be modified by mutual consent of the Parties. The consent of the United States to such modification must be in the form of a written notification from EPA, but need not be filed with the Court to be effective.

241. **Approvals**. All EPA approvals or comments required under this Decree shall be in writing. All Plaintiff/Intervenor approvals shall be sent from the offices identified in Paragraph 240.

242. **Paperwork Reduction Act**. The information required to be maintained or submitted pursuant to this Consent Decree is not subject to the Paperwork Reduction Act of 1980, 44 U.S.C. §§ 3501 et seq.

243. **Modification**. This Consent Decree contains the entire agreement of the Parties and will not be modified by any prior oral or written agreement, representation, or understanding. Prior drafts of the Consent Decree will not be used in any action involving the interpretation or enforcement of the Consent Decree. Non-material modifications to this Consent Decree will be effective when signed by EPA and Sunoco. 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 emissions limitations following the installation of control equipment, provided that such changes are agreed upon in writing between EPA and Sunoco. Material modifications to this Consent

Decree will be in writing, signed by EPA, the Appropriate Plaintiff/Intervenor, and Sunoco, and will be effective upon approval by the Court. Specific provisions in this Consent Decree that govern specific types of modifications shall be effective as set forth in the specific provision governing the modification.

244. **Effect of Shutdown**. Permanent shutdown of a unit shall be deemed to satisfy all requirements applicable to that unit. Permanent shutdown of a Refinery shall be deemed to satisfy all requirements applicable to that Refinery.

XVIII. TERMINATION

245. This Consent Decree shall be subject to termination upon motion by the United States or Sunoco under the conditions identified in Paragraph 247, below. Sunoco may seek termination of this Consent Decree for any one of the Refineries upon either (A) completion and satisfaction at the relevant Refinery(ies) of all of the following requirements of this Paragraph 245.a-e, below, or (B) anytime after the permanent shutdown of, and relinquishment of all operating permits for, such Refinery.

a. installation of control technology systems as specified in this Consent Decree;

b. compliance with all provisions contained in this Consent Decree, which compliance may be established for specific parts of the Consent Decree in accordance with Paragraph 246, below;

c. payment of all penalties and other monetary obligations due under the terms of the Consent Decree; no penalties or other monetary obligations due hereunder can be outstanding or owed to the United States or the Plaintiff/Intervenors;

d. application for and receipt of permits incorporating the surviving emission limits and standards established under Section V; and

e. operation for at least one (1) year of each unit in compliance with the emission limits established herein, and certification of such compliance for each unit within the first progress report following the conclusion of the compliance period.

246. Certification of Completion.

a. Prior to moving for termination, Sunoco may certify completion for each Sunoco Refinery of one or more of the following parts of the Consent Decree, provided that all of the related requirements for that Refinery have been satisfied:

i. Sections V.A through V.E - Fluid Catalytic Cracking Unit (including operation of the unit for one year after completion in compliance with the emission limits set pursuant to the Consent Decree);

ii. Sections V.F through V.G - Heaters and Boilers (including operation of the relevant units for one year after completion in compliance with the emission limit set pursuant to the Consent Decree);

b. Within 90 days after Sunoco concludes that any of the parts of the Consent Decree identified in Paragraph 246.a have been completed for any one of the Sunoco Refineries, Sunoco may submit a written report to EPA and the Appropriate Plaintiff/Intervenor describing the activities undertaken and certifying that the applicable Sections have been completed in full satisfaction of the requirements of this Consent Decree, and that Sunoco is in substantial and material compliance with all of the other requirements of the Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of Sunoco:

> To the best of my knowledge, after appropriate investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are penalties for

submitting false information, including the possibility of fine and imprisonment for knowing violations.

c. Upon receipt of Sunoco's certification, EPA, after reasonable opportunity for review and comment by the Plaintiff/Intervenors, shall notify Sunoco whether the requirements set forth in the applicable Paragraphs have been completed in accordance with this Consent Decree. The parties recognize that ongoing obligations under such Paragraphs remain and necessarily continue (e.g., reporting, record keeping, training, auditing requirements), and that Sunoco's certification is that it is in current compliance with all such obligations.

i. If EPA concludes that the requirements have not been fully complied with, EPA shall notify Sunoco as to the activities that must be undertaken to complete the applicable Paragraphs of the Consent Decree. Sunoco shall perform all activities described in the notice, subject to its right to invoke the dispute resolution procedures set forth in Section XV ("Retention of Jurisdiction/Dispute Resolution").

ii. If EPA concludes that the requirements of the applicable Paragraphs have been completed in accordance with this Consent Decree, EPA will so certify in writing to Sunoco. This certification shall constitute the certification of completion of the applicable Paragraphs for purposes of this Consent Decree.

d. Nothing in this Paragraph 246 shall preclude the United States or the Plaintiff/Intervenors from seeking stipulated penalties for a violation of any of the requirements of the Consent Decree regardless of whether a Certification of Completion has been issued under this Paragraph 246 of the Consent Decree. In addition, nothing in

this Paragraph 246 shall permit Sunoco to fail to implement any ongoing obligations under the Consent Decree regardless of whether a Certification of Completion has been issued with respect to this Paragraph 246 of the Consent Decree.

247. At such time as Sunoco believes that it has satisfied the requirements for termination set forth in Paragraph 245, Sunoco shall certify such compliance and completion to the United States and the Plaintiff/Intervenors in writing. Unless, within 120 days of receipt of Sunoco's certification under this Paragraph 247, either the United States or any Plaintiff/Intervenor objects in writing with specific reasons, the Court may upon motion by Sunoco order that this Consent Decree be terminated. If either the United States or any Plaintiff/Intervenor objects to the certification by Sunoco then the matter shall be submitted to the Court for resolution under Section XV ("Retention of Jurisdiction/Dispute Resolution") of this Consent Decree. In such case, Sunoco shall bear the burden of proving that this Consent Decree should be terminated.

XIX. SIGNATORIES

248. Each of the undersigned representatives certify that they are fully authorized to enter into the Consent Decree on behalf of such Parties, and to execute and to bind such Parties to the Consent Decree.

Dated and entered this _____ day of _____, 200_.

_____
UNITED STATES DISTRICT JUDGE

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc., subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

Date: 6/09/05

Kelly A. Johnson

KELLY A. JOHNSON
Acting Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

Date: June 6, 2005

Michael McNulty

MICHAEL J. McNULTY
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, DC 20044-7611

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc., subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

Date: 6/6/05

PATRICK L. MEEHAN
United States Attorney
Eastern District of Pennsylvania
615 Chestnut Street Suite 1250
Philadelphia, PA 19106

Date: 6/6/05

VIRGINIA A. GIBSON
Assistant United States Attorney
Chief, Civil Division
Eastern District of Pennsylvania
615 Chestnut Street Suite 1250
Philadelphia, PA 19106

Date: 6/6/05

MARGARET L. HUTCHINSON
Assistant United States Attorney
Deputy Chief, Civil Division
Eastern District of Pennsylvania
615 Chestnut Street Suite 1250
Philadelphia, PA 19106

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc., subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Date: 6/14/05

THOMAS V. SKINNER
Acting Assistant Administrator for
Enforcement and Compliance Assurance
United States Environmental Protection
Agency
Washington, D.C. 20460

REDLINE DRAFT 05/20/2005

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc.

FOR PLAINTIFF/INTERVENOR
THE COMMONWEALTH OF
PENNSYLVANIA:

Date: 5/25/2005

JOSEPH A. FEOLA
Regional Director
Southeast Regional Office
Commonwealth of Pennsylvania
Department of Environmental Protection
2 East Main Street
Norristown, PA 19401-4915

Date: 5/25/2005

DOUGLAS G. WHITE
Assistant Counsel
Southeast Regional Office
Commonwealth of Pennsylvania
Department of Environmental Protection
2 East Main Street
Norristown, PA 19401

ATTORNEY FOR
PLAINTIFF/INTERVENOR
COMMONWEALTH OF
PENNSYLVANIA

REDLINE DRAFT 05/20/2005

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc.

FOR PLAINTIFF/INTERVENOR
THE STATE OF OHIO:

JAMES PETRO
Attorney General of Ohio

By:

JOHN K. MCMANUS
Assistant Attorney General
Environmental Enforcement Section
30 East Broad Street, 25th Floor
Columbus, Ohio 43215-3400

ATTORNEY FOR
PLAINTIFF/INTERVENOR
STATE OF OHIO

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc.

FOR PLAINTIFF/INTERVENOR
THE STATE OF OKLAHOMA:

Date: June 1, 2005

STEVEN A. THOMPSON
Executive Director
Oklahoma Department of Environmental Quality
707 North Robinson
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc.

FOR PLAINTIFF/INTERVENOR
CITY OF PHILADELPHIA:

ROMULO L. DIAZ, Jr.
Acting City Solicitor

Date: 6/6/05

By: Patrick K. O'Neill

PATRICK K. O'NEILL
Divisional Deputy City Solicitor,
Environmental Law
City of Philadelphia Law Dept.
One Parkway Bldg. 16th Floor
1515 Arch Street
Philadelphia, PA 19102

ATTORNEY FOR
PLAINTIFF/INTERVENOR CITY OF
PHILADELPHIA

JOHN DOMZALSKI
Commissioner of Public Health

Date: 6/6/05

By: Morris Fine

MORRIS FINE
Director
Philadelphia Air Management Services
321 University Avenue, Second Floor
Philadelphia, PA 19104

WE HEREBY CONSENT to the entry of the Consent Decree in United States et al. v. Sunoco U.S.A. Inc.

FOR DEFENDANT SUNOCO, INC.:

Date: 5/24/05

JOEL H. MANESS
Senior Vice-President
Sunoco, Inc.
1801 Market Street
Philadelphia, PA 19103

Date: 5/24/05

THOMAS S. STAMMEL
Senior Counsel
Sunoco Inc. (R&M)
100 Green Street
P.O. Box 426
Marcus Hook, PA 19103

ATTORNEY FOR SUNOCO, INC.

APPENDIX A

Milestones for Marcus Hook SCR

Request for Quotation (RFQ) issued to potential vendors	10/31/10
Vendor selection	2/28/11
Purchase Order placed for equipment	8/31/11
Start of pre-shutdown construction	6/30/12

APPENDIX B

List of Heaters and Boilers Greater than 40 mmBTU Per Hour

SUNOCO PHILADELPHIA REFINERY

Unit	Htr	Maximum/Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	2001 Utilization Rate mmBTU/hr (HHV)	2001 Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	2002 Utilization Rate mmBTU/hr (HHV)	2002 Emission Rate lb/mmBTU (HHV)	2002 NOx Emissions tons/year	2001-2002 Average NOx Emissions tons/year
Philadelphia - Girard Point									
137	F1	475/415	318.22	0.166	231.9	362.96	0.180	285.9	258.9
137	F2	155	80.80	0.166	58.9	82.47	0.180	65.0	62.0
137	F3	60	43.99	0.315	60.7	44.13	0.400(1)	77.3	69.0
231	B-101	116/91	64.94	0.115	32.7	67.39	0.105	31.1	31.9
433	H-1	243	153.45	0.018	12.3	152.21	0.019	12.7	12.5
1332	H-400	198/186	119.84	0.156(1)	81.9	119.39	0.156(1)	81.8	81.9
1332	H-401	233	169.33	0.156(1)	115.7	177.83	0.154	119.7	117.7
1332	H-601	48	33.31	0.141	20.6	33.03	0.091	13.1	16.9
1332	H-602	49	34.79	0.120	18.2	35.61	0.098	15.3	16.8
1332	H-1	45	6.40	0.151	4.2	3.27	0.176	2.5	3.4
1332	H-2	60	40.43	0.110	19.5	46.42	0.094	19.0	19.3
1332	H-3	43	29.91	0.139	18.2	26.13	0.089	10.2	14.2
BH #3	#37	495	136.58	0.248	148.3	251.49	0.221	243.3	195.8
BH #3	#38	495	163.40	0.248	177.5	190.68	0.221	184.5	181.0
BH #3	#39	495	277.02	0.248	300.9	256.55	0.221	243.3	272.1
BH #3	#40	660	351.53	0.248	381.8	373.95	0.221	361.7	371.8
1232	B-104	89/70	43.73	0.026	5.0	51.62	0.027	6.2	5.6

Unit	Htr	Maximum/Allowable Annual Heat Input Capacity mmBTU/hr (HHV)	2001 Utilization Rate mmBTU/hr (HHV)	2001 Emission Rate lb/mmBTU (HHV)	2001 NOx Emissions tons/year	2002 Utilization Rate mmBTU/hr (HHV)	2002 Emission Rate lb/mmBTU (HHV)	2002 NOx Emissions tons/year	2001-2002 Average NOx Emissions tons/year
Philadelphia - Point Breeze									
210	H101	192/183	120.10	0.056	29.0	133.75	0.084	49.0	39.0
210	H201	275/242	201.43	0.116	102.0	196.73	0.123	106.0	104.0
210	13H1	288/235.4	156.47	0.104(1)	71.3	158.82	0.088	61.0	66.2
864 Ref	PH1	80	25.56	0.167(1)	18.7	28.81	0.137	17.0	17.9
864 Ref	PH7	45.5	20.19	0.227	20.0	22.38	0.125	12.0	16.0
864 Ref	PH11	74	35.48	0.138	21.0	41.37	0.131	24.0	22.5
864 Ref	PH12	85.1	25.21	0.111	12.0	31.81	0.119(1)	16.6	14.3
865 HDS	11H1	79/72.2	40.46	0.113(1)	20.0	36.28	0.085	14.0	17.0
865 HDS	11H2	58/49.9	38.68	0.088	15.0	39.17	0.099	17.0	16.0
866 GO HDS	12H1	56/43	23.09	0.096	10.0	34.60	0.083	13.0	11.5
#22 B'lrhse	#1	169	73.75	0.046	15.0	9.51	0.034	1.0	8.0
#22 B'lrhse	#2	169	81.28	0.046	16.0	96.26	0.046	19.0	17.5
#22 B'lrhse	#3	203	104.36	0.052	24.0	126.74	0.047	26.0	25.0
860 Ref. Htr	2H2	77/70	44.36	0.158	31.0	47.18	0.183	38.0	34.5
860 Ref. Htr	2H4	117/99	61.15	0.158	42.0	62.43	0.183	50.0	46.0
860 Ref. Htr	2H3	185/175	92.76	0.160	65.0	108.30	0.163(1)	77.3	71.2
860 Ref. Htr	2H5	170/155	101.33	0.160	71.0	116.53	0.163(1)	83.2	77.1
860 Ref. Htr	2H7	66/59	36.42	0.133	21.0	44.61	0.157(1)	30.7	25.9
860 Ref. Htr	2H8	55/49.6	28.19	0.061	8.0	37.30	0.059	10.0	9.0
860 Ref. Blr	2H9	165	0.00		0.0	12.04	0.026	1.0	0.5
868 FCC	8H101	54/49.5	24.79	0.133	14.0	18.82	0.121	10.0	12.0
TOTAL		**6621.6/6316.2**			**2314.4**			**2448.4**	**2381.4**
Footnotes:									
(1) Allowable lb/mmBTU instead of actual									

Type of data used to derive emission estimate (i.e., emission factor, stack test, or CEMS data)
CEMS
CEMS
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
CEMS
CEMS
CEMS
CEMS
STACK TEST

Type of data used to derive emission estimate (i.e., emission factor, stack test, or CEMS data)
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
CEMS
CEMS
CEMS
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
STACK TEST
CEMS
STACK TEST

APPENDIX C

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 NO_x 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. If Sunoco decides to use a PEMS, Sunoco 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 D

NSPS Subpart J Compliance Schedule for Heaters and Boilers

Refinery/Unit		Date
PHILADELPHIA REFINERY		
137 Unit	F-1	12.31.10
	F-2	12.31.10
	F-3	12.31.10
231 Unit	B-101	12.31.10
433 Unit	H-1	12.31.10
1332 Unit	H-400	12.31.10
	H-401	12.31.10
	H-601	12.31.10
	H-602	12.31.10
	H-1	12.31.10
	H-2	12.31.10
	H-3	12.31.10
#3 Boiler House	#37 Boiler	12.31.10
	#38 Boiler	12.31.10
	#39 Boiler	12.31.10
	#40 Boiler	12.31.10
1232 Unit	B-104	12.31.10
210 Unit	H-101	12.31.10
	H-201	12.31.10
	13H-1	12.31.10
864 Unit	PH-1	12.31.10
	PH-7	12.31.10
	PH-11	12.31.10
	PH-12	12.31.10
865 Unit	11H-1	12.31.10
	11H-2	12.31.10
866 Unit	12H-1	12.31.10
860 Unit	2H-2	12.31.10
	2H-3	12.31.10
	2H-4	12.31.10
	2H-5	12.31.10
	2H-7	12.31.10

TOLEDO REFINERY		
Plant 5	H-501	12.31.09
	H-503	12.31.09
	H-504	12.31.09
	H-507	12.31.09
	H-512	12.31.09
Plant 6-1	H-601A	12.31.09
	H-601B	12.31.09
	H-602	12.31.09
Plant 6-2	H-603	12.31.09
	H-6104	12.31.09
Plant 6-3	H-6301	12.31.09
	H-6303	12.31.09
	H-6305	12.31.09
Plant 9-1	H-9101	12.31.09
Plant 9-2	H-9201	12.31.09
	H-9202	12.31.09
	H-9203	12.31.09
	H-9251	12.31.09
	H-9252A	12.31.09
	H-9252B	12.31.09
Plant 9-3	H-9301	12.31.09
	H-9302	12.31.09
	H-9303	12.31.09
	H-9304	12.31.09
#10 Boiler	H-1910	12.31.09

APPENDIX E

Fuel Oil Combustion Phaseout Schedule for Heaters and Boilers

REFINERY/UNIT	DATE
MARCUS HOOK REFINERY	
15 Boiler House	
#5 Boiler	12/31/05
Ethylene Complex	
B Boiler	12/31/05
C Boiler	12/31/05
PHILADELPHIA REFINERY	
#3 Boiler House	
#37, #38, #39 and #40 Boilers	12/31/10
137 Crude Unit	
F-1	12/31/07
F-2	Date of Entry
F-3	12/31/08
TOLEDO REFINERY	
#10 Boiler	
H-1910	Date of Entry

APPENDIX F

List of Flaring Devices

REFINERY	Flare Identification
Marcus Hook Refinery	12-3 10-4 Ethylene Complex
Philadelphia Point Breeze	North Yard LPG Flare South Yard North Flare South Yard South Flare 867 Acid Gas Flare 867 SWS Gas Flare
Philadelphia Girard Point	1231/1232 Flares 433 Flare
Toledo	Plant 4 Flare Plant 9 Flare
Tulsa	#2 Plat Flare(aka Alky flare) Coker Flare WPU Flare(aka FCCU flare) LEU/MEK Flare

APPENDIX G

NSPS Subpart J Compliance Schedule for Flares

Refinery/Unit	Date
MARCUS HOOK	
12-3	12.31.2008
10-4	12.31.2008
Ethylene Complex	12.31.2010
PHILADELPHIA	
PB North Yard LPG Flare	Currently NSPS
PB South Yard North Flare	Date of Entry
PB South Yard South Flare	OOS
PB 867 Acid Gas Flare	Date of Entry
PB 867 SWS Gas Flare	Date of Entry
GP 1231/1232 Flares	12.31.2010
GP 433 Flare	12.31.2010
TOLEDO	
Plant 4 Flare	12.31.2009
Plant 9 Flare	12.31.2010
TULSA	
Coker Flare	Date of Entry
WPU Flare(aka FCCU flare)	Date of Entry
LEU/MEK Flare	Currently NSPS

APPENDIX H

Alternate Monitoring Protocol (AMP) for Flares

Following are the seven items required for Alternative Monitoring Protocols for Flares (as referenced from EPA's RFG Guidance):

1. A description of the gas stream or system including submission of a portion of the appropriate piping diagrams not including sample station vents indicating:

    a. the boundaries of the gas stream or system, (i.e., from where to where)
    b. the affected fuel gas combustion device(s), (i.e., which flare)
    c. the location of the proposed sampling point for the alternative monitoring (at least one time sampling is required)

2. A statement that there are no crossover or entry points where sour gas (gases with high H_2S concentration) can be introduced into the gas stream or system not including sample station vents

3. An explanation of the conditions that ensure low emission rates

    a. low concentrations of sulfur compounds including H_2S (i.e., control equipment or product specifications) at all times or
    b. very low non-continuous volumetric flow rates (i.e., sample stations vent streams)

4. The supporting test results from sampling the requested gas stream or 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:

    a. for frequently operated gas streams or systems, two weeks of daily monitoring (fourteen samples);
    b. for infrequently operated gas streams or systems including sample station vents, seven samples shall be analyzed unless other additional information would support reduced sampling

5. A description of how the two weeks (or seven samples for infrequently operated gas streams or systems including sample station vents) of monitoring results compares to the typical range of H_2S concentration expected for the gas stream or system going to the affected fuel gas combustion device (e.g., the results from two weeks of sampling with length of stain tube for a frequently operated loading rack included the entire range of products loaded, and therefore, should be representative of typical operating conditions affecting the H_2S concentration in the gas stream going to the loading rack flare).

6. Identification of a representative process parameter that can function as an indicator of stable and low H_2S concentration for each gas stream or system not including sample station vents (e.g., review of gasoline sulfur content as an indicator of sulfur content in the vapors directed to a loading rack flare)

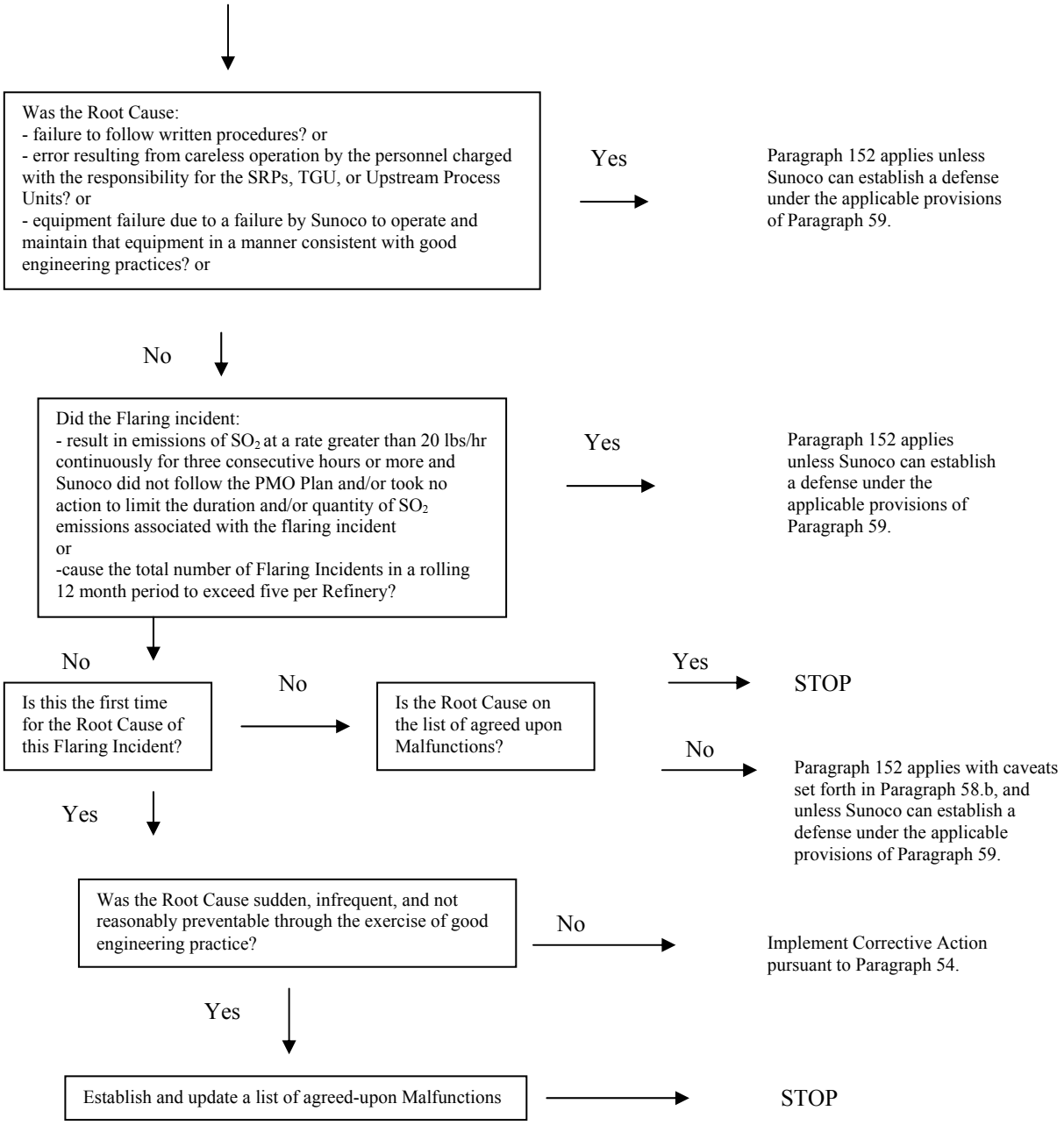
7. A suggested process parameter limit for each gas stream or system not including sample station vents, the rationale for the parameter limit, and the schedule for the acquisition and review of the process parameter data; the refiner will collect the proposed process parameter data in conjunction with the testing of the gas stream's stable and low H_2S concentration

Monitoring frequency is linked to the data range and variability. The requester determines the average H_2S concentration from the results of two weeks of daily analyses for frequently operated gas streams (or the analyses of seven samples for infrequently operated gas streams) and to determine the standard deviation of the analyses results. The sum of the average H_2S concentration and three times the standard deviation determines the frequency of monitoring that the gas will require after the U.S. EPA approves an alternate monitoring plan and in each subsequent six-month period. The results from sampling in subsequent six-month periods will determine whether the owner or operator of the refinery may proceed to less frequent monitoring, must retain the frequency from the previous six-month period, or must sample more frequently in the subsequent six-month period.

Gas streams that require only one time monitoring are:

1. Certified commercial grade natural gas
2. Certified commercial grade liquefied propane gas
3. Certified commercial grade hydrogen
4. Vapors from gasoline loading racks that load only gasoline that meet a product specification for sulfur content
5. LPG Sample station vent streams. A single sample point representing the worst case stream is to be used to represent the "group" of LPG Sample station vent streams. One time monitoring only applies if the cumulative daily sample station estimated emissions are <100 lbs/d SO_2.
6. Gas Sample station vent streams. A single sample point representing the worst case stream is to be used to represent the "group" of Gas Sample station vent streams. One time monitoring only applies if the cumulative daily sample station estimated emissions are <100 lbs/d SO_2.
7. Streams that contain <20 ppm H_2S.

APPENDIX I

LOGIC DIAGRAM FOR PARAGRAPHS 56-58

ALL ACID GAS FLARING/TAIL GAS INCIDENTS