IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS

UNITED STATES OF AMERICA, STATE OF ALABAMA, and STATE OF LOUISIANA,	)	
Plaintiffs,	)	
v.	)	**Civil Action Case No.** H-10-1042
SHELL CHEMICAL LP,	)	
Defendant.	)	

CONSENT DECREE

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WHEREAS, Plaintiff, the United States of America ("Plaintiff" or "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"), the Alabama Department of Environmental Management, an agency of the State of Alabama, and the Louisiana Department of Environmental Quality, an agency of the State of Louisiana, have simultaneously filed a Complaint against and lodged this Consent Decree with Defendant, Shell Chemical Company ("Shell"), for alleged environmental violations at the Shell petroleum refineries in Saraland, Alabama and St. Rose, Louisiana ("Refineries");

WHEREAS, the United States alleges that Shell has violated and/or continues to violate the following statutory and regulatory provisions of the Clean Air Act:

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, 51.165 and 51.166 (the "PSD Rules"), for heaters and boilers for nitrogen oxide ("NO_x") and sulfur dioxide ("SO_2").

2) New Source Performance Standards ("NSPS") found at 40 C.F.R. Part 60, Subparts A, J, and QQQ promulgated pursuant to Section 111 of the Act, 42 U.S.C. § 7411 ("Refinery NSPS Regulations"), for sulfur recovery plants, fuel gas combustion devices, and wastewater systems;

3) National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Benzene Waste Operations promulgated pursuant to Section 112(e) of the Act, 42 U.S.C. § 7412(e), and found at 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP Regulations");

4) Leak Detection and Repair ("LDAR") requirements promulgated pursuant to Sections 111 and 112 of the Act, 42 U.S.C. §§ 7411 and 7412, 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");

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

WHEREAS, Shell denies the violations alleged in the Complaint;

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

WHEREAS, Shell consents to the simultaneous filing of the Complaint and lodging of this Consent Decree, despite its denial of the violations alleged in the Complaint, and agrees to undertake the installation of air pollution control equipment and enhance its air pollution management practices to reduce air emissions;

WHEREAS, with respect to the provisions of Section IV ("Control of Acid Gas Flaring Incidents and Tail Gas Incidents"), 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, Secondary 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 "Malfunction," as defined in Paragraph 10.Y 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, discussions between the Parties have resulted in the settlement embodied in this Consent Decree;

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

WHEREAS, by signing this Consent Decree, Shell has waived the right of service of process, and the United States agrees that Shell need not answer the Complaint;

WHEREAS, EPA sought and Shell provided information concerning Refinery operations and configuration;

WHEREAS, the Parties engaged in numerous meetings over the past two and a half years to resolve this matter;

WHEREAS, the Parties agree that: (i) settlement of the matters set forth in the Complaint is in the best interests of the Parties and the public; and (ii) entry of this Consent Decree without litigation is the most appropriate means of resolving this matter; and

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

WHEREAS, the United States is contemporaneously lodging, in the District Court for the District of Puerto Rico, a consent decree with a related company, Shell Chemical Yabucoa, Inc., resolving similar allegations of violations at Shell Chemical Yabucoa, Inc.'s refinery in Yabucoa, Puerto Rico. That consent decree secures the following emissions reductions from the Yabucoa refinery: 769.5 tons of NOx emissions per year and 645 tons of SO_2 emissions per year. The emissions reductions to be achieved under that consent decree have been taken into account in resolving the allegations of this Consent Decree;

NOW THEREFORE, with respect to the matters set forth in the Complaint and in Part XVI ("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 this 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 Complaint states a claim upon which relief may be granted for injunctive relief and civil penalties against Shell 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 and Section 305 of the CAA, 42 U.S.C. § 7605 and in the States by 28 U.S.C. § 1367.

2. Venue is proper in the Southern District of Texas 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). Shell consents to the personal jurisdiction of this Court, waives any objections to venue in this District, and does not object to the participation of the State of Alabama and the State of Louisiana in this action.

3. EPA has given notice of the commencement of this action to the State of Alabama and the State of Louisiana 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 this Consent Decree shall apply to the Refineries, and shall be binding upon the United States, the State of Alabama, the State of Louisiana, and Shell, its agents, successors, and assigns.

5. Shell agrees not to contest the validity of this Consent Decree in any subsequent proceeding to implement or enforce its terms. Shell further agrees that, in any action to enforce this Consent Decree, it shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

6. Shell agrees that the Refineries are covered by this Consent Decree from the Date of Entry until termination pursuant to Section XVII. Prior to transferring ownership or operation of any portion of either Refinery, Shell shall give written notice of this Consent Decree and provide a copy of it to any intended successor in interest of such Refinery.

7. Shell 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 either Refinery upon the execution by the transferee, and the entry by the Court, of a modification to this Consent Decree, which makes the terms and conditions of this Consent Decree for such Refinery applicable to the transferee. At least 30 days prior to any such proposed transfer, Shell shall notify and certify to the United States and the applicable State, in accordance with the notice provisions in Paragraph 201 that the transferee has the financial and technical ability to assume, and is contractually bound to assume, the obligations and liabilities under this Consent Decree.

8. By no earlier than 30 days after such notice, Shell may file a motion with the Court to modify this Consent Decree to make the terms and conditions of this Consent Decree applicable to the transferee. Shell shall remain responsible for the obligations and liabilities of this Consent Decree for the Refinery if the United States or the applicable State opposes the motion or the Court finds that the transferee does not have the financial and technical ability to assume the obligations and liabilities under this Consent Decree.

9. Except as provided in Paragraph 7, Shell shall be solely responsible for ensuring that performance of the work required by this Consent Decree is undertaken in accordance with the deadlines and requirements contained in this Consent Decree and any attachments hereto. Shell 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 this Consent Decree, upon execution of any contract relating to such work.

III. DEFINITIONS

10. Unless otherwise defined herein, terms used in this 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 this Consent Decree shall be defined, solely for purposes of this Consent Decree and the reports and documents submitted pursuant thereto, as follows:

A. "365-day rolling average" shall mean the average daily emission rate during the preceding 365 days that the emission unit was operating (Operating Days).

B. "Acid Gas" shall mean any gas that contains hydrogen sulfide and is generated at a refinery by the regeneration of an amine scrubber solution but does not include tail gas.

C. "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.

D. "Acid Gas Flaring Device" or "AG Flaring Device" shall mean any device 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 or sulfuric acid. The AG Flaring Devices currently in service are identified in Paragraph 32. To the extent that, during the duration of the Consent Decree, a Refinery uses AG Flaring Devices other than those specified in Paragraph 32 for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, those AG Flaring Devices shall be covered under this Consent Decree.

E. "Acid Gas Flaring Incident" or "AG Flaring Incident" shall mean the continuous or intermittent AG Flaring that results in the emission of sulfur dioxide equal to, or in excess of, 500 pounds in any 24-hour period. Where 500 pounds or more of sulfur dioxide has been emitted in a 24-hour period and AG 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 AG Flaring within the AG Flaring Incident. When AG Flaring occurs within a 24-hour period at more than one AG Flaring Device, the quantity of sulfur dioxide attributable to AG Flaring emitted from each AG Flaring Device shall be added together for purposes of determining whether there is an AG Flaring Incident, unless the Root Causes of the flaring at the Flaring Devices are not related to each other.

F. "ADEM" shall mean the Alabama Department of Environmental Management.

G. "Calendar Quarter" shall mean one of the three-month periods ending on March 31st, June 30th, September 30th, and December 31st.

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

I. "Clean Air Act" or "CAA" shall mean the Clean Air Act, 42 U.S.C. § 7401, et seq.

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

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

L. "Co-Plaintiff" shall mean the State of Alabama or the State of Louisiana.

M. "Current Generation Low NO_x Burners" or "Current Generation LNBs" shall mean those burners that are designed to achieve a NO_x emission rate of less than or equal to 0.040 lb NO_x/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 NO_x/mmBTU (HHV).

N. "Date of Entry" shall mean the date on which this Consent Decree is approved and signed by a United States District Court Judge for the Southern District of Texas.

O. "Date of Lodging" shall mean the date this Consent Decree is lodged with the United States District Court for the Southern District of Texas.

P. "Date of Termination" shall mean date of termination of this Consent Decree pursuant to Part XVIII.

Q. "Day" or "Days" shall mean a calendar day or days unless expressly stated to be a Working Day or Days. In computing any period of time under this Consent Decree (except for the calculation of rolling averages), where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next Working Day.

R. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

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

T. "Flaring Incident" shall mean an Acid Gas Flaring Incident and/or a Tail Gas Incident.

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

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

W. "Hydrocarbon Flaring Device" or "HC Flaring Device" shall mean a flare device, 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. The HC Flaring Devices currently in service are listed in Paragraph 32. To the extent that, during the duration of the Consent Decree, the Refinery utilizes HC Flaring Devices other than those specified in

Paragraph 32 for the purposes of combusting any excess of a refinery-generated gas other than Acid Gas and/or Sour Water Stripper Gas and/or Tail Gas, those HC Flaring Devices shall be covered under this Consent Decree.

X. "Hydrocarbon Flaring Incident" or "HC Flaring Incident" shall mean continuous or intermittent Hydrocarbon Flaring that results in the emission of sulfur dioxide equal to or greater than 500 pounds in any 24-hour period. Where 500 pounds or more of sulfur dioxide has been emitted in a 24-hour period and HC 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 HC Flaring within the HC Flaring Incident. When HC Flaring occurs within a 24-hour period at more than one HC Flaring Device, the quantity of sulfur dioxide attributable to HC Flaring emitted from each HC Flaring Device shall be added together for purposes of determining whether there is a HC Flaring Incident, unless the Root Causes of the flaring at the Flaring Devices are not related to each other.

Y. "LDEQ" shall mean the Louisiana Department of Environmental Quality.

Z. "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."

AA. "Natural Gas Curtailment" shall mean a restriction imposed by a natural gas supplier which limits Shell's ability to obtain natural gas.

BB. "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 NO_x/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 NO_x/mmBTU (HHV).

CC. "NO_x" shall mean nitrogen oxides.

DD. "Operating Day" shall mean a Day during which a minimum of 18 hours of valid emissions data are obtained.

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

FF. "PEMS" shall mean predictive emissions monitoring systems.

GG. "Parties" shall mean the United States, the State of Alabama, the State of Louisiana, and Shell Chemical Company.

HH. "Refineries" shall mean Shell's petroleum refinery located at 400 Industrial Parkway, Extension East, in Saraland, Alabama and Shell's petroleum refinery in St. Rose, Louisiana.

II. "Refinery" shall mean either Shell's petroleum refinery located at 400 Industrial Parkway, Extension East, in Saraland, Alabama or Shell's petroleum refinery in St. Rose, Louisiana.

JJ. "Root Cause" shall mean the primary cause(s) of an AG Flaring Incident(s), Hydrocarbon Flaring Incident(s), or a Tail Gas Incident(s).

KK. "Section" shall mean a portion of this Consent Decree identified by a Roman numeral.

LL. "Shell" shall mean Shell Chemical Company and its successors and assigns.

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

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

OO. "SO_2" shall mean sulfur dioxide.

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

QQ. "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.

RR. "Tail Gas" ("TG") shall mean exhaust from a Claus train and/or the Tail Gas Unit section of an SRP.

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

TT. "Tail Gas Incident" shall mean combustion of Tail Gas that either:

(i) is combusted in a flare and results in 500 pounds or more of SO_2 emissions in any 24-hour period; or

(ii) is combusted in a thermal incinerator and results in excess emissions of 500 pounds or more of SO_2 in any 24-hour period.

UU. Only those time periods with emissions whose SO_2 concentrations exceed 250 ppm (rolling twelve-hour average) shall be used to determine the amount of excess SO_2 emissions from the incinerator. During periods in which the SO_2 continuous emission analyzer

has exceeded the range of the instrument or is out of service, the amount of excess SO_2 emissions shall be based on good engineering judgment and/or other monitoring data.

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

WW. "Working Day" or "Working Days" shall mean any Day or Days except Saturday, Sunday, federal holiday or State holiday in the applicable State.

IV. AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS

A. NO_x Emission Reductions from Heaters and Boilers

11. Summary: Shell will reduce NO_x emissions from certain Refinery heaters and boilers that have a heat input capacity of greater than 40 mmBTU/hr. NO_x emission reductions will be accomplished through the installation of NO_x controls and the acceptance of permit requirements to keep such controls, or controls which result in the same or less NO_x emissions, on the controlled units or the Shutdown of certain units and the relinquishing of their permits to operate. Shell will monitor compliance with emission limits through source testing, use of CEMS, and/or the use of a PEMS.

12. Installation of NO_x Control Technology. Shell will select one or any combination of the following "Qualifying Controls" to satisfy the requirements of Paragraphs 14, 15 and 16:

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

b. Selective Catalytic Reduction (SCR) or Selective non-Catalytic Reduction (SNCR);

c. Flue gas recirculation and overfire air;

d. Other technologies which Shell demonstrates to EPA's satisfaction reduce NO_x emissions to 0.04 lb per million BTU or less when firing gas in heaters and boilers; and

e. Permanent unit Shutdown and relinquishment of the unit's permit to operate.

13. Appendix A to this Consent Decree ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour") provides the maximum heat input capacity and, if less, the allowable heat input capacity, in mmBTU/hr (HHV) for each of the heaters and boilers with a maximum heat input capacity greater than 40 mmBTU per hour at the Refineries.

14. By eight (8) years from Date of Entry, Shell will have installed Qualifying Controls at the Saraland Refinery such that units constituting at least 30% of its heat input capacity of heaters and boilers greater than 40 mmBtu/hr as listed in Appendix A are controlled through Qualifying Controls. Qualifying Controls implemented before the Date of Lodging can be used to satisfy this requirement.

15. By eight (8) years from the Date of Entry, Shell will have installed Qualifying Controls at the St. Rose Refinery such that units constituting a minimum of 30% of the heat input capacity of heaters and boilers greater than 40 mmBtu/hr are controlled through Qualifying Controls. Qualifying Controls implemented before the Date of Lodging can be used to satisfy this requirement. In the alternative, Shell may meet this requirement by: (a) installing Qualifying Controls at the St. Rose Refinery such that units constituting a minimum of 28% of the heat input capacity of heaters and boilers greater than 40mmBtu/hr are controlled through Qualifying Controls and (b) reducing NO_x emissions at the Shell Chemical LP Norco Chemical Plant in Norco, Louisiana by 10 TPY through Shutdown of diesel-fired pump EQT 0026, Emission Point Number 5037-07 as it appears in LDEQ Permit ID No. 3047-VI. Subject to EPA approval, Shell

may substitute for Shutdown of diesel-fired pump EPN 5037-07 a different NO_x control project at the St. Rose Refinery or Norco Chemical Plant that will result in NO_x reductions of 10 TPY.

16. By eight (8) years from Date of Entry, Shell will have submitted complete and timely applications to the applicable permitting authorities for federally enforceable requirements to maintain and operate the Qualifying Controls being used to comply with Paragraphs 14 and 15.

17. By eight (8) years and three (3) months from Date of Entry, Shell will submit a written report to EPA explaining how it satisfied the requirements of Paragraphs 12, 14, and 15.

18. NO_x Control Plan. Shell shall submit a detailed NO_x Control Plan ("Control Plan") to EPA, ADEM, and LDEQ for review and comment by no later than four (4) months after the Date of Entry of the Consent Decree. The Control Plan shall describe the achieved and anticipated progress toward meeting the requirements of this Section , and shall contain the following for each heater and boiler greater than 40 mmBTU/hr that Shell plans to control to satisfy the requirements of Paragraphs 12, 14, 15 and 16:

a. All of the information in Appendix A;

b. Identification of the type of Qualifying Controls installed or planned with the date installed or planned;

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; and

d. The amount in tons per year projected to be reduced.

Appendix A and the Control Plan 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. Shell may change any projections, plans, or information included in the Control Plan.

19. Monitoring. Beginning no later than 180 days after installing Qualifying Controls on and commencing operation of a heater or boiler that will be used to satisfy the requirements of Paragraphs 12, 14 and 15 (including units with Qualifying Controls installed before the Date of Entry), Shell 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 in accordance with Appendix B of this Consent Decree ("Predictive Emissions Monitoring Systems Requirements") using a PEMS developed and operated pursuant to the requirements of Appendix B.

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 and any periodic tests that may be required by EPA, ADEM, or LDEQ under other applicable regulatory authority. Shell shall use Method 7E, an EPA-approved, or a State-approved alternate test method, to conduct the initial performance testing. Shell shall report the results of the initial performance testing to EPA and ADEM or LDEQ, as applicable.

20. 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 19, Shell 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, Shell 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. Shell 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.

21. The requirements of this Section do not exempt Shell from complying with any and all Federal or State requirements that may require technology, equipment, monitoring, or other upgrades based on actions or activities occurring after the Date of Lodging, or based on new or modified regulatory, statutory, or permit requirements.

22. Shell shall retain all records required to support the reporting requirements under this Section until termination of the Consent Decree. Shell shall submit such records to EPA, ADEM, or LDEQ upon request.

B. Control Of SO_2 Emissions And NSPS Applicability To Fuel Gas Combustion Devices

23. Beginning on the Date of Lodging, Shell shall not burn Fuel Oil in any combustion unit at either Refinery except during periods of Natural Gas Curtailment at that Refinery. During periods of Natural Gas Curtailment, Shell shall burn only low sulfur (0.05 wt% sulfur or lower) liquid fuel in any combustion unit.

24. NSPS Applicability to Heaters, Boilers, and Other Fuel Gas Combustion Devices (other than Flaring Devices). All fuel gas combustion devices at the Refineries shall be "affected

facilities," as that term is used in 40 C.F.R. Part 60, Subparts A and J, subject to the applicable requirements of NSPS Subparts A and J, on the Date of Lodging, and required to comply with the applicable requirements of NSPS Subparts A and J for fuel gas combustion devices.

25. By the Date of Lodging, Shell shall comply with the Hydrogen Sulfide/Sulfur Dioxide ($H2S/SO_2$) monitoring requirements of NSPS Subparts A and J. Shell shall make monitoring data available to EPA upon request as soon as practicable. Shell shall install, certify, calibrate, maintain and operate all CEMS required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B.

26. Compliance with Consent Decree Constitutes Compliance with Certain NSPS Subpart A Requirements. For each fuel gas combustion device that becomes an "affected facility," as that term is used in 40 C.F.R. Part 60, Subparts A and J, pursuant to this Section IV, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for such fuel gas combustion device will 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(a).

27. Subpart Ja Applicability.

a. If, prior to the termination of this Consent Decree, any heater, boiler or other fuel gas combustion device becomes subject to NSPS Subpart Ja for a particular pollutant due to a "modification" (as that term is defined in the final Subpart Ja rule), the modified affected facility shall be subject to and comply with NSPS Subpart Ja in lieu of NSPS, Subpart J for that regulated pollutant to which a standard applies as a result of the modification.

b. If, prior to the termination of this Consent Decree, any heater, boiler or other fuel gas combustion device becomes subject to NSPS Subpart Ja due to a "reconstruction" (as that term is defined in the final Subpart Ja rule), the reconstructed facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.

C. Sulfur Recovery Plant

28. NSPS Applicability for SRP. The St. Rose Refinery does not have a Sulfur Recovery Plant. The Saraland Refinery Sulfur Recovery Plant ("SRP") consists of one sulfur recovery unit (SRU #1). SRU #1's control device is a SCOT Tail Gas Unit ("TGU"). Effective on the Date of Entry, the SRP shall be an "affected facility" as that term is used in 40 C.F.R. Part 60, Subparts A and J, and shall comply with all applicable requirements of 40 C.F.R. Part 60, Subparts A and J.

29. Sulfur Pit Emissions. By the earlier of the Saraland Refinery's next planned full outage or December 31, 2013, Shell shall route or re-route all sulfur pit emissions at the Saraland Refinery 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).

30. SRP Compliance with NSPS.

a. Emission Limit. The SRP shall comply with 40 C.F.R. § 60.104(a)(2) at all times except during periods of Startup, Shutdown or Malfunction, or during a Malfunction of the TGU. For purposes of determining compliance with the emission limits of 40 C.F.R. § 60.104(a)(2), the "start-up/shutdown" provisions set forth in NSPS Subpart A shall apply.

b. At all times, including periods of Startup, Shutdown and Malfunction, Shell shall, to the extent practicable, operate and maintain the SRP and TGU and any

supplemental control devices, in accordance with good air pollution control practices as required in 40 C.F.R. § 60.11(d).

c. Monitoring. Shell shall monitor all emission points (stacks) to the atmosphere from the SRP for tail gas emissions and shall monitor and report excess emissions, as required by 40 C.F.R. §§ 60.7(c), 60.13 and 60.105(a)(5, 6 and 7). Shell shall conduct emission monitoring with CEMS at each such emission point unless an alternative monitoring procedure has been approved by EPA under 40 C.F.R. § 60.13(i).

31. Preventive Maintenance Operation Plan.

a. By no later than six months after the Date of Entry, Shell shall have created a plan for implementing good air pollution control practices and minimizing SO_2 emissions for the Saraland Refinery, including enhanced maintenance and operation of the SRP and the associated TGU, any supplemental control devices, and the appropriate Upstream Process Units. This plan shall be termed a Preventive Maintenance Operation Plan ("PMO Plan"). By no later than six months after the Date of Entry, Shell shall submit to EPA and ADEM a summary of the PMO Plan. The PMO Plan shall provide for continuous operation of the SRP between scheduled maintenance turnarounds with minimization of emissions. The PMO Plan shall include, but not necessarily be limited to, sulfur shedding procedures, startup and shutdown procedures of the SRP, hot standby procedures, emergency procedures and schedules to coordinate maintenance turnarounds of the SRP Claus train and any supplemental control device to coincide with scheduled turnarounds of major Upstream Process Units. The PMO Plan shall have as a goal the elimination of Acid Gas Flaring. Shell shall comply with the PMO Plans at all times, including periods of Startup, Shutdown and Malfunction of its SRP.

Shell's changes to the PMO Plans related to minimizing Acid Gas Flaring and/or SO_2 emissions shall be summarized and reported to EPA and ADEM annually.

b. Governmental review of a PMO Plan and/or failure to comment on a PMO Plan does not constitute a governmental conclusion that any of the actions that Shell may take pursuant to such PMO Plan will result in compliance with the provisions of the Clean Air Act or any another applicable federal, state, or local law or regulation. Notwithstanding EPA's or ADEM's review of a PMO Plan, Shell shall remain solely responsible for compliance with the Clean Air Act and such other laws and regulations.

D. Flaring Devices – NSPS Applicability

32. NSPS Applicability.

The Saraland Refinery has two Flaring Devices, the No. 1 Flare (700-50-0100) and the OFH Flare (700-10-1002). The St. Rose Refinery has one Flaring Device, the FE-8501 Flare (EQT 013). These Flaring Devices are or will be affected facilities, as that term is used in 40 C.F.R. Part 60, by the Date of Entry. Such Flaring Devices shall be subject to and required to comply with the fuel gas combustion device requirements of 40 C.F.R. Part 60, Subparts A and J. They may also be used as emergency control devices for the quick and safe release of gases generated as a result of Startup, Shutdown, and/or Malfunction.

33. Compliance Methods for Flaring Devices. For each Flaring Device, Shell will use one or any combination of the following methods to comply with NSPS Subpart J:

a. Operate and maintain a flare gas recovery system to control all continuous or routine combustion in the Flaring Device;

b. Operate the Flaring Device as a fuel gas combustion device and comply with NSPS monitoring requirements by use of a CEMS pursuant to 40 C.F.R. § 60.105(a)(4) or

with a parametric monitoring system approved by EPA as an alternative monitoring system pursuant to 40 C.F.R. § 60.13(i); or

c. Eliminate the routes of continuous or intermittent, routinely-generated refinery fuel gases to a Flaring Device and operate the Flaring Device such that it receives only process upset gases, fuel gas released as a result of relief valve leakage, or gases released due to other emergency malfunctions.

34. Compliance Certification for Flaring Devices. For each Flaring Device, by thirty (30) days from the Date of Entry, Shell shall submit to EPA a Compliance Certification for Flaring Devices that (i) certifies compliance with one or more of the compliance methods set forth in Paragraph 33, and (ii) identifies the compliance method(s) used.

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

36. Refinery Fuel Gases.

a. Continuous or Intermittent, Routinely-Generated Refinery Fuel Gases. For continuous or intermittent, routinely-generated refinery gases that are combusted in any Flaring Device, Shell shall comply with the emission limit at 40 C.F.R. § 60.104(a)(1).

b. Non-Routinely Generated Gases. The combustion of gases generated as a result of Startup, Shutdown, and/or Malfunction of a refinery process unit or released to a 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).

E. Control of Acid Gas Flaring Incidents And Tail Gas Incidents

37. Acid Gas Flaring Incidents and Tail Gas Incidents. As specified by this Section and consistent with the requirements of 40 C.F.R. § 60.11(d), Shell shall investigate the cause of Acid Gas Flaring Incidents and Tail Gas Incidents ("Flaring Incidents") occurring after Date of Entry, take reasonable steps to correct the conditions that caused or contributed to such Flaring Incidents, and minimize such Flaring Incidents at the Refinery. Shell shall continue to follow the investigation and corrective action procedures after termination of the Consent Decree, but the reporting and stipulated penalty provisions of this Subsection shall not apply after termination.

38. Investigation and Reporting. No later than 45 days following the end of an Acid Gas Flaring Incident, a Tail Gas Unit shutdown, bypass of a Tail Gas Unit, or other event resulting in a Tail Gas Incident, including scheduled and unscheduled Shutdowns of a Sulfur Recovery Plant, occurring after the Date of Entry, Shell shall conduct an investigation to identify the Root Cause(s) of the Flaring Incident and record the findings of the investigations in a report ("Root Cause Failure Analysis"). The report for each Flaring Incident shall include, at a minimum, the following:

a. The date and time that the emission of SO_2 began and ended. To the extent that the Flaring Incident involved multiple releases, the report shall state the starting and ending dates and times of each release;

b. An estimate of the quantity of SO_2 that was emitted and the data and calculations that were used to determine that quantity, including an explanation of any estimates of missing data points;

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

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

e. An analysis of the measures, if any, available to reduce the likelihood of a recurrence of a Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If more than one reasonable alternative exists to address the Root Cause, the analysis shall discuss the alternatives, the probable effectiveness and cost of the alternatives, and whether an outside consultant should be retained to assist in the analysis. The analysis shall evaluate possible design, operation and maintenance changes.

f. A statement that: (i) specifically identifies each of the grounds for stipulated penalties in Paragraphs 41, 42 and 43 and describes whether or not the Flaring Incident falls under any of those grounds, provided, however, that Shell may choose to submit with the Root Cause Failure Analysis a payment of stipulated penalties without the need to specifically identify the grounds for the penalty. Such payment of stipulated penalties shall not constitute an admission of liability, nor shall it raise any presumption about the nature, existence or strength of Shell's potential defenses; (ii) if a Flaring Incident falls under Paragraph 43, describes whether it is a first time or recurring Root Cause; and (iii) if a Flaring Incident falls under either Paragraph 42 or 43.b, states whether or not Shell asserts a defense to liability for the Flaring Incident, and if so, a description of the defense.

g. If investigations of the causes and/or possible corrective actions are still underway on the due date of the report, Shell shall state the anticipated date that a follow-up report fully conforming to the requirements of subparagraphs 38.d. and 38.e. will be completed.

Shell shall complete such a report expeditiously. If Shell has not completed any report required under this Paragraph within 45 days (or such additional time as EPA may allow) of the due date for the initial report for the Flaring Incident, the stipulated penalty provisions of Section X shall apply, but Shell shall retain the right to dispute, under the dispute resolution provisions of Section XIV, any demand for stipulated penalties that was issued as a result of Shell's failure to complete the report required under this Paragraph within the time frame set forth. Nothing in this Paragraph excuses Shell from its investigation, reporting, and corrective action obligations under this Section for any Flaring Incident which occurs after a Flaring Incident for which Shell has requested an extension of time under this Subparagraph g; and

h. To the extent that completion of the corrective action(s), if any, is not finalized at the time of the completion of the report for the Flaring Incident required under this Paragraph, then, by no later than thirty (30) days after completion of corrective action(s), Shell shall supplement the report to identify the corrective action(s) taken and the dates of commencement and completion of implementation.

39. Corrective Action.

a. In response to any Flaring Incident occurring after the Date of Entry, as expeditiously as practicable, Shell shall take such interim and/or long-term corrective actions 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 Flaring Incident.

b. EPA does not, by its agreement to the entry of this Consent Decree or by its failure to object to any corrective action that Shell may take in the future, warrant or aver in any manner that any of Shell's corrective actions in the future will result in compliance with the

provisions of the Clean Air Act or its implementing regulations. Notwithstanding EPA's review of any plans, reports, corrective actions or procedures under this Section Shell remains solely responsible for compliance with the Clean Air Act and its implementing regulations. Nothing in this paragraph shall be construed as a waiver of EPA's rights under the Clean Air Act and its regulations for future violations of the Act or its regulations.

c. After a review of any report required by Paragraph 38 and submitted as required by Paragraph 48, EPA shall notify Shell in writing of (1) any deficiencies in the corrective actions listed in the findings and/or (2) any objections to the schedules of implementation of the corrective actions. Shell will implement an alternative or revised corrective action or implementation schedule based on EPA's comments. If EPA identifies as deficient a corrective action that is already completed, such corrective action will not be acceptable for remedying any subsequent, similar root cause(s) of any Flaring Incident. If EPA and Shell cannot agree on the appropriate corrective action(s) or implementation schedule(s) to be taken in response to a Root Cause, either party may invoke the dispute resolution provisions of Section XIV.

d. Nothing in this Section shall be construed to limit the right of Shell to take such corrective actions as it deems necessary and appropriate immediately following a Flaring Incident or in the period during preparation and review of any reports required under this Paragraph.

40. Stipulated Penalties for Acid Gas Flaring and Tail Gas Incidents. The provisions of Paragraphs 41 through 44 are to be used by EPA in assessing stipulated penalties for each Flaring Incident occurring after the Date of Entry and by the United States in demanding stipulated penalties under this Section IV.E. In the case of a Tail Gas Incident resulting from a

planned Shutdown of the SRP, no stipulated penalties shall apply to that Tail Gas Incident, provided that good air pollution control practices were utilized to minimize emissions to the extent practicable.

41. The stipulated penalty provisions of Paragraph 50 shall apply to each 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; or

c. A failure of equipment that is due to a failure by Shell to operate and maintain that equipment in a manner consistent with good engineering practice.

42. If the Flaring Incident is not a result of one of the Root Causes identified in Paragraph 41, then the stipulated penalty provisions of Paragraph 50 shall apply if the Flaring Incident:

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

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

43. With respect to any Flaring Incident not identified in Paragraphs 41 or 42, the following provisions shall apply:

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

i. If the Root Cause of the 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 Flaring Incidents, and the stipulated penalty provisions of Paragraph 50 shall not apply.

ii. If the Root Cause of the Flaring Incident was sudden and infrequent, and was reasonably preventable through the exercise of good engineering practice, then Shell shall implement corrective action(s) pursuant to Paragraph 39, and the stipulated penalty provisions of Paragraph 5750 shall not apply.

b. Recurrence: If the Root Cause is the same Root Cause that resulted in a previous Flaring Incident occurring since the Date of Entry, then Shell shall be liable for stipulated penalties under Paragraph 50 unless:

i. The Flaring Incident resulted from a Malfunction; or

ii. The Root Cause previously was designated as an agreed-upon malfunction under Paragraph 43.a.i; or

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

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

a. Force majeure, under the provisions of Section XIII.

b. As to Paragraph 41, the Flaring Incident does not meet the identified criteria.

c. As to Paragraph 42, Malfunction.

d. As to Paragraph 43, the Flaring Incident does not meet the identified criteria and/or was due to a Malfunction.

45. In the event a dispute under Paragraphs 41, 42 or 43 is brought to the Court pursuant to the dispute resolution provisions of Section XIV, Shell may also assert a Startup, Shutdown and/or Malfunction defense (including for an individual sulfur recovery unit within an SRP) under 40 C.F.R. § 60.104(a)(1), but the United States may assert that such defenses are not available.

46. If no Flaring Incident occurs at the Refinery for a rolling 36-month period, other than due to a Malfunction, a Tail Gas Incident resulting from a planned Shutdown of an SRP (provided that good air pollution control practices were utilized to minimize emissions to the extent practicable), or a Force Majeure event, then the stipulated penalty provisions of Paragraph 50 shall not apply. EPA may elect to reinstate the stipulated penalty provision if the Refinery has a Flaring Incident which would otherwise be subject to stipulated penalties. EPA's decision shall not be subject to dispute resolution. Once reinstated, the stipulated penalty provision shall continue for the remaining life of this Consent Decree for the Refinery.

47. Emission Calculations.

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

Tons of SO_2 = [FR][TD][ConcH2S][8.44 x 10-5].

Where:

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]

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 10.05 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an Acid Gas Flaring Incident that is comprised of intermittent Acid Gas 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 Acid Gas Flaring. For purposes of this Consent Decree, the rate of SO_2 emissions resulting from an Acid Gas Flaring Incident shall be expressed in terms of pounds per hour rounded to one decimal point and shall be calculated by the following formula:

$$ER = [FR][ConcH_2S][0.169]$$

Where:

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 Acid Gas 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 applicable State. 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.

c. 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 as follows:

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

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

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

Where:

ER_{TGI}	=	Emissions from Tail Gas at the Sulfur Recovery Plant incinerator, SO_2 lb 24 hour period

TD_{TGI} = Total Duration (number of hours) when the incinerator CEMS exceeded 250 ppmvd SO_2 corrected to 0% O_2 on a rolling twelve hour average, in each 24 hour period of the Incident

i = Each hourly average

$FR_{Inc.}$ = 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 = Each actual 12 hour rolling 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 = 68 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, Shell may use estimates based on best engineering judgment.

48. Semi-Annual Reporting. On each January 31 and July 31, Shell shall submit to EPA and the applicable state agency a semi-annual report that includes copies of every report of all Acid Gas Flaring Incidents and Tail Gas Incidents, as required in Paragraph 38, that Shell was required to prepare for the previous six month period. Each semi-annual report shall also include a summary of the Incidents including the following:

a. Date;

b. Summary of Root Cause(s);

c. Duration;

d. Amount of SO_2 released;

e. Any associated penalties for each Incident;

f. Whether Shell decided to take corrective action, and why, and, if corrective action is not already completed, a schedule for its implementation, including proposed commencement and completion date; and

g. A list of all Acid Gas Flaring Incidents and Tail Gas Incidents for which corrective actions are still outstanding.

h. Each semi-annual report shall also include a summary analysis of any trends identified by Shell, including the number, Root Cause, types of corrective action, and other relevant information regarding Acid Gas Flaring Incidents and Tail Gas Incidents at the Refinery in the previous six-month period.

F. Control Of Hydrocarbon Flaring Incidents

49. For Hydrocarbon Flaring Incidents occurring after the Date of Entry, Shell shall follow the same investigative, reporting, and corrective action procedures as those set forth in Paragraphs 38 and 39 for Acid Gas Flaring Incidents. Where a Hydrocarbon Flaring Incident is attributable to the startup or shutdown of a unit that Shell has previously analyzed under this Section, Shell may identify such prior analysis in its report in lieu of analyzing possible Corrective Actions under Paragraph 38.e and taking interim and/or long-term corrective action under Paragraph 39. Shell shall submit the Hydrocarbon Flaring Incident(s) reports as part of the Semi-annual Progress Reports required pursuant to Section VIII. Stipulated penalties under Paragraphs 40 through 43 shall not apply to Hydrocarbon Flaring Incident(s). The formulas at Paragraph 47, used for calculating the quantity and rate of SO_2 emissions during Acid Gas Flaring Incidents, shall be used to calculate the quantity and rate of SO_2 emissions during Hydrocarbon Flaring Incidents. Shell shall continue to follow the Hydrocarbon Flaring Incident

investigation and corrective action procedures after termination of the Consent Decree, but the reporting provisions of this Section shall not apply after termination.

G. Stipulated Penalties Under Section IV E

50. Shell shall be liable for the following stipulated penalties for violations of the requirements of Section IV E.

a. For each violation, the amounts identified below apply:

		Duration of Acid Gas Flaring or Tail Gas Incident		
		3 hours or less	3-24 hours	More than 24 hours
Total Tons of SO_2 Emitted in Flaring Incident	5 Tons or Less	$500 per ton or fraction of a ton	$750 per ton or fraction of a ton	$1000 per ton or fraction of a ton
	5-15 Tons	$1,200 per ton or fraction of a ton	$1,800 per ton or fraction of a ton	$2,300 per ton or fraction of a ton, up to $32,500 per calendar day
	More than 15 Tons	$1,800 per ton or fraction of a ton, up to $32,500 per calendar day	$2,300 per ton or fraction of a ton, up to $32,500 per calendar day	$2,300 per ton or fraction of a ton, up to $32,500 per calendar day

b. Where an Acid Gas Flaring Incident occurs due to intermittent combustion of Acid Gas and/or Sour Water Stripper Gas, the duration of the Acid Gas Flaring Incident is the time from commencement of emission of SO_2 in the Flaring Device to cessation of emission of SO_2 in the Flaring Device.

c. For failure to timely submit any report required by Section IV.E. or for submitting any report that does not conform substantially to its requirements:

Period of Non-Compliance	Penalty per day
Days 1-30	$750
Days 31-60	$1,500
Over 60 days	$3,000

d. For those corrective action(s) which Shell (i) agrees to undertake following receipt of an objection by EPA pursuant to Paragraph 39; or (ii) is required to undertake following dispute resolution, then, from the date of EPA's receipt of Shell's Semi-Annual report under Paragraph 48 until the date that either: (i) a final agreement is reached between EPA and Shell regarding the corrective action; or (ii) a court order regarding the corrective action is entered, Shell shall be liable for stipulated penalties as follows:

Period of Non-Compliance	Penalty per day
Days 1-120	$50
Days 121-180	$100
Days 181 - 365	$300
Over 365 days	$3,000

or 1.2 times the economic benefit resulting from Shell's failure to implement the corrective action(s), whichever is greater.

e. For failure to complete any corrective action under Paragraph 39 in accordance with the schedule for such corrective action agreed to by Shell or imposed on Shell pursuant to the dispute resolution provisions of Section XIV (with any such extensions thereto as to which EPA and Shell may agree in writing):

Period of Non-Compliance	Penalty per day
Days 1-30	$1,000
Days 31-60	$2,000
Over 60 days	$5,000

H. CERCLA/EPCRA

51. To the extent that for any Flaring Incident prior to the Date of Lodging, Shell discovers information demonstrating a failure to comply with the reporting requirements for continuous releases of SO_2 pursuant to Section 103(c) of CERCLA and/or Section 304 of EPCRA, including the regulations promulgated thereunder, a voluntary disclosure by Shell of

any such violations will not be deemed "untimely" under EPA's Audit Policy, solely on the ground that it is submitted more than twenty-one (21) days after it is discovered, provided all such disclosures are made by no later than thirty (30) days from the Date of Entry.

I. Benzene Waste NESHAP Program

Program Summary: Shell will undertake the following measures to minimize fugitive benzene waste emissions at each of its Refineries.

52. In addition to complying with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP" or "Subpart FF"), Shell will undertake the measures set forth in this Section to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions at its Refineries.

53. Current Subpart FF Status. As of the Date of Lodging, Shell's most recently-submitted TABs for the Refineries report less than 10 Mg/yr for each Refinery.

54. Refinery Compliance Status Changes. If, at any time after the Date of Lodging, a Refinery is determined to have a TAB equal to or greater than 10 Mg/yr, that Refinery must comply with the compliance option set forth at 40 C.F.R. § 61.342(e) ("6 BQ Compliance Option").

55. One-Time Review of Each Refinery's TAB and Compliance with the Benzene Waste NESHAP.

a. Phase One of the Compliance Review and Verification Process. Within one year of the Date of Lodging, Shell will conduct a Compliance Review and Verification Process through which it will complete a review of each Refinery's TAB and its compliance with the Benzene Waste NESHAP. This review will include:

i. an identification of each waste stream meeting the definition of a waste stream under 40 C.F.R. § 61.341, including slop oil, tank water draws, spent caustic, spent caustic hydrocarbon layer, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes;

ii. a review and identification of the calculations and/or measurements the Refinery uses 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, consistent with the requirements of 40 C.F.R. § 61.355(c)(1) and (3), at no less than 10 waste streams at the St. Rose Refinery and no less than 20 waste streams at the Saraland Refinery. At the Saraland Refinery, regardless of whether they meet the regulatory definition of "waste stream," eight of these 20 streams will be: the desalter rag layer; desalter #1 bypass water; make up water to desalter #2; a tank that serves as a wastewater collection tank at the Blakely Island Terminal; the tank at the Refinery that receives wastewater from the Blakely Island Terminal (presently tank 504); the sour water stripper effluent; gasoline tank water draws; and naphtha tank water draws. For waste streams not sampled, Shell may use the previous year's analytical data or documented knowledge

of those waste streams, consistent with the requirements of 40 C.F.R. § 61.355(c)(2);

iv. an identification of any existing noncompliance with the requirements of Subpart FF.

v. At the Saraland Refinery, an evaluation of the benzene waste handling operations associated with the tank(s) at the Refinery that receive(s) wastewater from the Blakely Island Terminal, Tanks 110 and 111, and the barge loading operations, and with the transfer of materials between the Blakely Island Terminal and the Refinery.

By no later than thirty (30) days following the completion of this Phase One of the Compliance Review and Verification Process, Shell will submit to EPA and the applicable Co-Plaintiff a Benzene Waste NESHAP Compliance Review and Verification Report ("BWON Compliance Review and Verification Report") for each Refinery that sets forth and certifies the information required under this subparagraph a.

b. Phase Two of the Review Process. Based on EPA's review of the BWON Compliance Review and Verification Report(s), EPA may select up to 20 additional waste streams at each Refinery for sampling for benzene concentration. Shell will conduct the required sampling under representative conditions and submit the results to EPA within sixty (60) days of its receipt of EPA's request. Shell will use the results of this additional sampling to recalculate the TAB and the uncontrolled benzene quantity and to amend the BWON Compliance Review and Verification Report, as needed. If Phase Two sampling is required by EPA under this

subparagraph, Shell will submit an amended BWON Compliance Review and Verification Report within sixty (60) days following the date of the completion of the sampling.

56. Implementation of Actions Necessary to Correct Non-Compliance or to Come Into Compliance.

a. Amended TAB Report. If a BWON Compliance Review and Verification Report or amended BWON Compliance Review and Verification Report indicates that a report submitted by Shell pursuant to 40 C.F.R. § 61.357(c) for a Refinery has not been filed, is inaccurate, and/or does not satisfy the requirements of Subpart FF, Shell will submit, by no later than sixty (60) days after completion of that BWON Compliance Review and Verification Report, corrections to the most recent TAB report to the applicable federal and state agencies.

b. Submittal of Compliance Plans. If the results of a BWON Compliance Review and Verification Report indicate that the TAB at that Refinery equals or exceeds 10 Mg/yr, Shell will submit to the applicable federal and state agencies, by no later than 90 days after completion of the BWON Compliance Review and Verification Report, a plan that identifies with specificity the compliance strategy and schedule that Shell will implement to ensure that the subject Refinery will comply with the 6 BQ Compliance Option as soon as practicable. At the Saraland Refinery, the waste streams to and from the Blakely Island Terminal will be included in the 6 BQ Compliance Option. In the event the Blakely Island Terminal is no longer connected via pipeline to the Refinery, the Terminal will not be included in the 6BQ Compliance Option. Shell will include in this plan a schedule for the training required under Paragraph 60. Shell will implement the plan unless and until EPA disapproves the plan or Shell modifies the plan with EPA's approval.

c. Review and Approval of Plans Submitted Pursuant to subparagraph 56.b. Any plan submitted pursuant to subparagraph 56.b will be subject to approval, disapproval or modification by EPA, which will act after an opportunity for consultation with the applicable Co-Plaintiff. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, Shell will submit to EPA and the applicable Co-Plaintiff a revised plan that responds to all identified deficiencies. Upon receipt of approval or approval with conditions, Shell will implement the plan according to the schedule provided in the approved plan.

d. Certification of Compliance with the 6 BQ Compliance Option. By no later than thirty (30) days after completion of all actions at a Refinery required pursuant to the plan(s) required by subparagraphs 56.b or 56.c, Shell shall ensure that the Refinery complies with the Benzene Waste NESHAP. Shell will submit a report to EPA and the applicable Co-Plaintiff certifying that the Refinery complies with the Benzene Waste NESHAP.

57. Carbon Canisters. If the TAB at a Refinery equals or exceeds 10 Mg/yr, and a carbon canister(s) is utilized as a control device under the Benzene Waste NESHAP, Shell will comply with the requirements of Subpart FF and with the requirements of this Paragraph.

a. Shell will within 180 days after the submission of the TAB Report use primary and secondary carbon canisters and operate them in series.

b. In the first report due under Paragraph 73 (Recordkeeping and Reporting Requirements for this Section), after the installation of the primary and secondary carbon canister, Shell will submit a report certifying that dual carbon canister systems are in use at all locations where carbon canisters are used to comply with the Benzene Waste NESHAP. The report will include a list of all locations in each Refinery where secondary carbon canisters are

installed and will state whether VOC or benzene will be used to monitor for breakthrough at each such canister under and as required by subparagraph 57.e.

c. Except as expressly permitted under subparagraph 57.g, Shell will not use single carbon canisters for any new process units or installations that require controls pursuant to the Benzene Waste NESHAP.

d. For dual carbon canister systems, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 50 ppm volatile organic compounds, excluding ethane and methane (hereinafter "VOC"), or 5 ppm benzene.

e. Beginning seven days after installation of a new dual carbon canister system, Shell will monitor for breakthrough between the primary and secondary carbon canisters in accordance with the frequency specified in 40 C.F.R. § 61.354(d), and will monitor the outlet of the secondary canister on a monthly basis to verify the proper functioning of the system.

f. Shell will replace the original primary carbon canisters immediately when breakthrough is detected between the primary and secondary canister. Shell will make the original secondary carbon canister the new primary carbon canister and a fresh carbon canister the secondary canister. For purposes of this subparagraph, "immediately" will mean within twelve (12) hours of the detection of a breakthrough for canisters of 55 gallons or less, and within twenty-four (24) hours of the detection of a breakthrough for canisters greater than 55 gallons. In lieu of replacing the primary canister immediately, Shell may elect to monitor the outlet of the secondary canister the day breakthrough between the primary and secondary canister is identified and each calendar day thereafter, continuing this daily monitoring until the primary canister is replaced. If the constituent being monitored (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 twelve (12) hours of the detection of a breakthrough. Shell will make the original secondary carbon canister the new primary carbon canister and a fresh carbon canister the secondary canister.

g. Temporary Applications. Shell may use properly-sized single canisters for short-term operations such as with temporary storage tanks or as temporary control devices. For canisters operated as part of a single canister system, breakthrough is defined for purposes of this Decree as any reading of VOC above background or benzene above 1 ppm. Shell will monitor for breakthrough from single carbon canisters each calendar day. When breakthrough is detected, Shell will immediately replace the single carbon canister with a fresh carbon canister, discontinue flow, or route the stream to an alternate, appropriate device. For this Paragraph, "immediately" means within twelve (12) hours of the detection of a breakthrough for canisters of 55 gallons or less and within twenty-four (24) hours of the detection of a breakthrough for canisters greater than 55 gallons. If Shell discontinues flow to the single carbon canister or routes the stream to an alternate, appropriate control device, Shell must replace such canister before it is returned to service.

h. Shell will maintain a readily available supply of fresh carbon canisters at all times or otherwise ensure that such canisters are readily available to implement the requirements of this Paragraph.

i. Shell will maintain records associated with the requirements of this Paragraph in accordance with 40 C.F.R. § 61.356(j)(10), and include the monitoring readings observed and the constituents being monitored.

58. Laboratory Audits.

a. Initial audits. Prior to using any laboratory for analysis of benzene waste samples, including the analysis required by the Phase One Review set forth in subparagraph 55.a, Shell will complete a third party audit of that laboratory to ensure that proper analytical and quality assurance/quality control procedures are followed.

b. Subsequent audits. For each laboratory it continues to use, Shell will complete such third party audits no less often than every two (2) years.

c. Shell may retain third parties to conduct these audits or use audits conducted by others as its own, but the obligation to ensure that its Refineries comply with this Consent Decree and Subpart FF rest solely with Shell.

59. Annual Review. Commencing no later than one year from the Date of Lodging, Shell will conduct an annual review of each Refinery's process information, including construction projects, to ensure that all new benzene waste streams are included in the Refinery's waste stream inventory. Shell may provide for this review in the Refineries' existing Management of Change programs.

60. Standard Operating Procedures and Training.

a. Prior to collecting any benzene waste samples, Shell will train Refinery employees who will be drawing benzene waste samples. Shell will conduct this training for such employees annually.

b. If a Refinery's TAB equals or exceeds 10 Mg/yr, Shell will develop standard operating procedures for all control equipment used to comply with the Benzene Waste NESHAP within sixty (60) days of the installation of the equipment. By no later than one hundred and eighty (180) days after the installation of the equipment, Shell will have trained in

these procedures all operators assigned to this equipment. Shell will complete comparable training for any person who subsequently becomes an operator, prior to his/her assumption of this duty. Shell will perform "refresher" training in these procedures no less often than every three years.

c. Shell must require any contractor hired to perform all or part of the requirements of this Section IV.I to properly train its employees to implement the relevant provisions of this Section IV.I.

61. Waste/Slop/Off-Spec Oil Management/Spills

a. Control Status of and Plan to Quantify Uncontrolled Waste/Slop/Off-Spec Oil Streams. Within one (1) year from the Date of Lodging, Shell will submit to EPA and the applicable Co-Plaintiff a plan for each Refinery for quantifying waste/slop/off-spec oil movements for all benzene waste streams which are not controlled at the Refinery, along with 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 each refinery. Representatives from Shell and EPA thereafter may confer about the appropriate characterization of each such refinery's waste/slop/off-spec oil streams and the necessary controls, if any, for the waste management units handling such oil streams for purposes of the Refinery's TAB calculation and/or compliance with the 6 BQ Compliance Option. If requested by EPA, Shell will promptly submit revised schematics that reflect the Parties' agreements regarding the characterization of these oil streams and the appropriate control standards. Shell will use these plans and schematics in preparing the end-of-line sampling plans required under Paragraph 63.

b. Non-Aqueous Benzene Waste Streams. For each Refinery where the TAB is equal to or exceeds 10 Mg/yr, all waste management units handling non-exempt, non-aqueous benzene wastes, as defined in Subpart FF, must meet the applicable control standards of Subpart FF.

c. Aqueous Benzene Waste Streams. For purposes of calculating each Refinery's TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), Shell will include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). Appropriate adjustments will be made to such calculations to avoid the double counting of benzene. For purposes of complying with the 6 BQ Compliance Option, all waste management units handling aqueous benzene waste streams will either meet the applicable control standards of Subpart FF or will have their uncontrolled benzene quantity count toward the applicable 6 BQ limit.

d. Benzene Spills. Beginning on the Date of Entry, Shell shall review each spill at a Refinery to determine if more than 10 pounds of benzene waste was generated in any 24-hour period as a result of the spill. Shell shall include the benzene generated by such spills in the TAB and in the uncontrolled benzene quantity calculation for the Refinery, as and to the extent required by Subpart FF.

62. Benzene Waste Operations Sampling Plans: General. Within one year of the Date of Lodging, Shell will submit to EPA and the applicable Co-Plaintiff, for approval, a benzene waste operations sampling plan for each Refinery which describes the sampling of benzene waste streams that Shell will utilize to estimate quarterly and annual TABs.

63. Benzene Waste Operations Sampling Plans: Content Requirements

a. Refineries with a TAB less than 10 Mg/yr. The sampling plan will identify:

i. each waste stream that contributed 0.05 Mg/yr or more at the point of generation to the previous year's TAB calculations; and

ii. the proposed End-of-Line (EOL) sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual TAB under the terms of Paragraph 66.

The sampling plan will require Shell to take and analyze, in each Calendar Quarter, at least three representative samples from each sampling location identified in subparagraph 63.a.(ii), and annually, all waste streams identified in subparagraph 63.a.(i);

b. Refineries with a TAB greater than or equal to 10 Mg/yr. Within 90 days of Shell reporting a TAB equal to or exceeding 10 Mg/yr, Shell will submit to EPA a revised sampling plan which will identify:

i. each uncontrolled waste stream that contains greater than 0.05 Mg/yr of benzene at the point of generation; and

ii. the proposed End-of-Line (EOL) sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual uncontrolled benzene quantity under the terms of Paragraph 66.

The sampling plan will require Shell to take and analyze, in each Calendar Quarter, at least three representative samples from all waste streams and sampling locations identified in subparagraphs 63.b(i) and (ii).

64. Benzene Waste Operations Sampling Plans: Timing for Implementation. Shell will implement the sampling required under each sampling plan during the first full Calendar Quarter after Shell submits the plan. Shell will continue to implement the sampling plan (i) unless and until EPA disapproves the plan; or (ii) unless and until Shell modifies the plan, with EPA's approval, under Paragraph 65.

65. Benzene Waste Operations Sampling Plans: Modifications

a. Changes in Processes, Operations, or Other Factors. If changes in processes, operations, or other factors lead Shell to determine that a sampling plan for a Refinery may no longer provide an accurate basis for estimating that Refinery's quarterly or annual TABs or uncontrolled benzene quantities under Paragraph 66, then by no later than ninety (90) days after Shell makes this determination, Shell will submit to EPA and the applicable Co-Plaintiff a revised benzene waste operations sampling plan for EPA approval. In the first full Calendar Quarter after submitting the revised plan, Shell will implement the revised plan. Shell will continue to implement the revised plan unless and until EPA disapproves the revised plan after an opportunity for consultation with the applicable Co-Plaintiff.

b. Requests for Modifications to the Sampling Frequency. After two (2) years of implementing a sampling plan, Shell may submit to EPA, with a copy to the applicable Co-Plaintiff, a request for approval to reduce a Refinery's sampling frequency. Shell will not implement any proposed revisions under this Subparagraph until EPA provides its approval after an opportunity for consultation with the applicable Co-Plaintiff. EPA will not unreasonably withhold its approval.

66. Quarterly and Annual Estimations of TABs and Uncontrolled Benzene Quantities. At the end of each Calendar Quarter and based on sampling results and approved flow calculations, Shell will calculate a quarterly and projected annual:

a. TAB for Refineries with a TAB less than 10 Mg/yr; and

b. uncontrolled benzene quantity for Refineries with a TAB greater than or equal to 10 Mg/yr.

In making these calculations, Shell will use the average of the three samples collected at each sampling location. Shell will submit these calculations in the reports due under this Section.

67. Corrective Measures: Basis. Except as set forth in Paragraph 68, Shell will implement corrective measures at a Refinery if:

a. For Refineries with a TAB less than 10 Mg/yr, the quarterly TAB equals or exceeds 2.5 Mg or the projected annual TAB equals or exceeds 10 Mg for the then-current compliance year; and

b. For Refineries with a TAB greater than or equal to 10 Mg/yr, the quarterly uncontrolled benzene quantity equals or exceeds 1.5 Mg or the projected annual uncontrolled benzene quantity equals or exceeds 6 Mg for the then-current compliance year.

68. Exception to Implementing Corrective Measures

If, for any particular Calendar Quarter, Shell can identify the reason(s) that the quarterly and projected annual calculations result in benzene quantities in excess of 2.5 Mg/quarter or 10 Mg/yr, respectively, and Shell states that it does not expect such reason or reasons to recur, then Shell may exclude the benzene quantity attributable to the identified reason(s) from the projected calendar year quantity, so long as Shell reports its determination and its reasoning to EPA and the applicable Co-Plaintiff. EPA and the applicable Co-Plaintiff may dispute Shell's

determination. If that exclusion results in no potential violation of the Benzene Waste Operation NESHAP, Shell will not be required to implement corrective measures under Paragraph 67, and Shell may exclude the uncontrolled benzene attributable to the identified reason(s) in determining the applicability of Paragraph 66. At any time that Shell proceeds under this Paragraph, Shell will describe how it satisfied the conditions in this Paragraph in the reports due under Section VIII.

69. Compliance Assurance Plan. If Shell meets one or more of the conditions in Paragraph 67 (except as provided under Paragraph 68), then by no later than sixty (60) days after the end of the Calendar Quarter in which one or more of the conditions were met, Shell will submit a compliance assurance plan to EPA for approval, with a copy to the applicable Co-Plaintiff. In that compliance assurance plan, Shell will identify the quantity and cause(s) of the potentially-elevated benzene quantities, all corrective actions that Shell has taken or plans to take to ensure that the cause(s) will not recur, and the schedule of actions that Shell will take to ensure that the subject refinery complies with the Benzene Waste Operations NESHAP for the calendar year. Shell will implement the plan unless and until EPA disapproves it after an opportunity for consultation with the applicable Co-Plaintiff.

70. Third-Party Assistance. If the projected annual benzene quantity under Paragraph 66 exceeds, in two consecutive quarters, 10 Mg/yr for a Refinery subject to Paragraph 66.a, or 6 Mg/yr for a Refinery subject to Paragraph 66.b, and Shell cannot identify the reason for the exceedances as allowed under Paragraph 68, Shell will retain a third-party contractor during the following quarter to undertake a TAB study and compliance review at that Refinery. By no later than ninety (90) days after Shell receives the results of the third-party TAB study and compliance review, Shell will submit to EPA and the applicable Co-Plaintiff such results and a

plan and schedule for remedying any deficiencies identified in the third-party study and compliance review. Shell will implement its proposed plan unless and until EPA disapproves after an opportunity for consultation with the applicable Co-Plaintiff. By no later than thirty (30) days after completion of the implementation of all actions, if any, required to come into compliance with the applicable compliance option, Shell will submit its certification and a report to EPA and the applicable Co-Plaintiff that such Refinery complies with the Benzene Waste Operations NESHAP.

71. Miscellaneous Measures. If a Refinery's TAB exceeds 10 Mg/yr, Shell will:

a. Conduct monthly visual inspections of and, if appropriate, refill all Subpart FF water traps within each Refinery's individual drain systems;

b. Within 180 days after the submission of a TAB report that shows that the TAB equals or exceeds 10 Mg/yr, identify and mark at the drain all area drains that are segregated stormwater drains;

c. On a weekly basis, visually inspect all Subpart FF conservation vents or indicators on process sewers for detectable leaks, 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, Shell may submit a request to EPA to modify the frequency of the inspections. EPA will not unreasonably withhold its consent to such modification. Nothing in this subparagraph will require Shell to monitor conservation vents on fixed roof tanks;

d. Conduct quarterly monitoring and repair of the oil-water separators consistent with the "no detectable emissions" provision in 40 C.F.R. § 61.347; and

e. Conduct quarterly seal gap measurements of floating roof portions of oil-water separators, as outlined in 40 C.F.R. § 60.693-2.

72. Record Keeping and Reporting Requirements for this Section Outside of the Reports Required under 40 C.F.R. § 61.357 and the Progress Report Procedures of Section VII (Reporting and Recordkeeping). At the times specified in the applicable provisions of this Section IV.I, Shell will submit, as and to the extent required, the following reports to EPA and the applicable Co-Plaintiff:

a. BWON Compliance Review and Verification Report (¶ 55.a), as amended, if required (¶ 55.b);

b. Amended TAB Report, if required (¶ 56.a.);

c. Plan for the Refinery to come into compliance with the 6 BQ compliance option upon discovering that its TAB equals or exceeds 10 Mg/yr through the BWON Compliance Review and Verification Report (¶ 56), or through sampling (¶ 56.b);

d. Compliance certification, if required (¶ 56.d);

e. Report certifying the completion of the installation of dual carbon canisters (¶ 57.b) if required;

f. Schematics of waste/slop/off-spec oil movements (¶ 61), as revised, if required;

g. Sampling Plans (¶ 62), and revised Sampling Plans, if required (¶ 65); and

h. Quarterly EOL sampling results, which include flow, concentration, and benzene quantities.

73. Record Keeping and Reporting Requirements for this Section: As Part of Either the Reports Required under 40 C.F.R. § 61.357 or the Progress Report Procedures of Section VIII (Reporting and Recordkeeping).

Shell will submit the following information as part of the information submitted in either the quarterly report required pursuant to 40 C.F.R. § 61.357(d)(6) and (7) ("Section 61.357 Reports") or in the reports due pursuant to Section VIII ("Reporting and Recordkeeping"):

a. Sampling Results. The report will include a list of all waste streams sampled, the results of the benzene analysis for each sample, the computation of the quarterly and projected calendar year TAB, and the quarterly and projected calendar year uncontrolled benzene quantity;

b. Training. Initial and subsequent training conducted in accordance with Paragraph 60;

c. Laboratory Audits. Initial and subsequent audits conducted pursuant to Paragraph 58 in the reporting period for which the report is due, 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.

74. At any time after two years of reporting pursuant to the requirements of Paragraph 73, Shell may submit a request to EPA to modify the reporting frequency for any or all of the reporting categories of Paragraph 73. This request may include a request to report the previous year's projected calendar year TAB and uncontrolled benzene quantity semi-annually or annually. Shell will not change the due dates for its reports under Paragraph 0 unless and until EPA approves Shell's request after an opportunity for consultation with the applicable Co-Plaintiff.

75. Certifications Required in this Section.

Certifications required under this Section IV.I will be made in accordance with the provisions of Paragraph 132.

76. Agencies to Receive Reports, Plans and Certifications Required in this Section; Number of Copies. Unless otherwise specified in this Section, Shell will submit all reports, plans and certifications required to be submitted under this Section IV.I to EPA, the appropriate EPA Region and the applicable Co-Plaintiff. For each submission, Shell will submit two copies to EPA, two copies to the appropriate EPA Region and two copies to the applicable Co-Plaintiff. By agreement between Shell and each of the offices that is to receive the materials in this Section IV.I, Shell may submit the materials electronically.

J. NSPS QQQ Audit

77. Shell may elect to perform an audit of compliance with the regulatory obligations promulgated at 40 C.F.R. Part 60, Subpart QQQ ("Subpart QQQ") ("QQQ Audit") at each Refinery. Shell shall notify EPA in writing within ninety (90) days from the Date of Lodging if it has elected to perform any QQQ Audit pursuant to this Section.

78. A QQQ Audit may cover all potential obligations from the effective date of Subpart QQQ through the date of the audit, including, but not limited to: (1) potential failures to make required applicability determinations; (2) potential failures to install proper control or monitoring equipment; (3) potential failures to undertake work practices; and (4) potential failures to submit accurate and/or timely reports.

79. The QQQ Audit may be performed by either a qualified outside contractor or qualified internal staff.

80. The QQQ Audit must be completed within one (1) year of notification under Paragraph 1.Shell shall submit a final written report of the QQQ Audit (the "QQQ Audit Report") to EPA within thirty (30) days of the Audit's completion.

81. The QQQ Audit Report shall: describe the processes, procedures, and methodology used to conduct the audit; clearly identify any violations or potential violations of Subpart QQQ discovered; describe any and all measures taken or to be taken to correct the disclosed violations; and provide details concerning the costs associated with such corrective action(s) and economic benefit(s) obtained by Shell.

82. The QQQ Audit Report shall be signed by the appropriate corporate official of Shell making the following certification:

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

83. Violations and potential violations reported in the QQQ Audit Report, and corrected by the date of the QQQ Audit Report or such other reasonable additional time as EPA allows, shall be deemed to satisfy the requirements of EPA's Audit Policy. If EPA determines that the QQQ Audit was consistent with the requirements of this Section, EPA shall so notify Shell in writing, and Shell shall thereupon be released from liability for any claims for civil and administrative penalties with respect to all violations or potential violations disclosed and corrected in accordance with this Section, and contained in EPA's notification.

84. At the time it elects to undertake a QQQ Audit for a Refinery, Shell shall pay, pursuant to the Stipulated Penalty payment provisions of Section X, a stipulated penalty of

$50,000, covering any and all disclosed violations at that Refinery. If EPA determines that Shell's economic benefit of non-compliance at that Refinery exceeds $25,000, Shell shall pay an additional stipulated penalty for that Refinery equal to the difference between such economic benefit and $25,000, within 30 days of receipt of EPA's written notification of its determination.

K. Leak Detection And Repair Program

Program Summary: Shell will undertake at each Refinery the following measures to improve each Refinery's LDAR program and minimize or eliminate fugitive emissions from valves and pumps in light liquid and/or in gas/vapor service and to make any existing facilities, as defined in 40 CFR, Part 60, Subpart A, General Provisions, "affected facilities," as defined in the LDAR Regulations.

A. Introduction

85. In order to minimize or eliminate fugitive emissions of volatile organic compounds (VOCs), benzene, volatile hazardous air pollutants (VHAPs), and organic hazardous air pollutants (HAPs) from valves and pumps in light liquid and/or in gas/vapor service, Shell will implement at each Refinery the requirements of this Section as part of the Refinery's LDAR program, which includes (or shall include) compliance with 40 C.F.R., Part 60, Subpart VV and GGG; 40 C.F.R. Part 61, Subparts J and V; 40 C.F.R. Part 63, Subparts F, H, and CC; and any applicable state and local LDAR requirements that are federally enforceable or implemented by the State of Alabama or the State of Louisiana. Collectively, these federal, state and local requirements are the LDAR Regulations. The terms "in light liquid service" and "in gas/vapor service" have the definitions set forth in the LDAR Regulations.

B. Applicability

86. On the Date of Entry, Shell shall implement the requirements of this Section for all equipment qualifying as "affected facilities" under the LDAR Regulations as of the Date of Lodging (i.e., existing "affected facilities").

87. Six months after the Date of Lodging, all existing facilities, including the group of all equipment (as defined by 40 C.F.R. § 60.591) within each process unit and each compressor (as defined by 40 C.F.R. § 60.591), that are not already subject to the LDAR Regulations as of the Date of Lodging, and all facilities subsequently added to the Refineries, shall become "affected facilities" for purposes of 40 C.F.R. Part 60, Subpart GGG, and shall become subject to and comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, and the requirements of this Section IV.K. regardless of whether such facilities have been constructed, modified or reconstructed prior to this date. All such facilities shall remain "affected facilities" after termination of this Consent Decree, including for purposes of permitting under Title V.

C. **Written Refinery-Wide LDAR Programs**

88. Within three months of the Date of Lodging, Shell shall submit for EPA's approval a written refinery-wide program (LDAR Program) for each Refinery that ensures compliance with the LDAR Regulations and the requirements of this Section within one year of the Date of Lodging.

89. The refinery-wide LDAR Program for each Refinery shall include:

a. Identification of all equipment in light liquid and/or in gas/vapor service that are or will be subject to the LDAR Regulations pursuant to Paragraphs 86 and 87 of this Section and that have the potential to leak VOCs, HAPs, VHAP, or benzene within the process units.

b. Procedures for identifying leaking equipment within process units;

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

d. Procedures for identifying and including in the LDAR Program new equipment;

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

f. A definition of "LDAR Personnel" and a process for accountability of LDAR personnel for LDAR performance.

90. Within two years of the Date of Lodging, Shell shall update each Refinery-wide LDAR Program to include all "affected facilities" and the applicable requirements referred to in Paragraph 85. A copy of the updated program shall be included with the next semi-annual report required in Paragraph 117116.a.

If EPA notifies Shell that any portion of the refinery-wide LDAR Program is not acceptable, Shell will modify such portions in accordance with EPA's comments, and re-submit those portions. Shell shall comply with the LDAR Programs once submitted and while pending EPA approval, and shall modify such LDAR Programs in the event that EPA notifies Shell of any unacceptable provisions.

D. Training.

91. At each Refinery, Shell will provide training for LDAR personnel as follows:

a. For personnel newly-assigned to LDAR responsibilities, within six months of the Date of Lodging, require LDAR training prior to each employee beginning such work;

b. For all personnel with assigned LDAR responsibilities, within six months of the Date of Lodging, provide and require completion of annual LDAR training;

c. For all other Refinery operations and maintenance personnel, provide training, within twelve months of the Date of Lodging and every three years thereafter, that

includes instruction on aspects of LDAR if and to the extent those aspect of LDAR are relevant to the person's duties.

92. If contractors are used to fulfill the requirements of this Section, Shell shall ensure that such contractors receive the training specified in Paragraph 91.

E. LDAR Audits.

93. LDAR Audits. At each Refinery, Shell shall implement the Refinery-wide LDAR audits set forth in Paragraphs 94 and 95 to ensure the Refineries' compliance with the LDAR Regulations and the requirements of this Consent Decree. Each LDAR audit shall include, but shall not be limited to, comparative monitoring, records review to ensure monitoring and repairs were completed in the required periods, field reviews to ensure all regulated equipment is included in the LDAR program, a review to ensure records and reports have been maintained and submitted as required, and observation of the LDAR technicians' calibration and monitoring techniques. During each LDAR audit, Shell shall calculate leak rates for each process unit where comparative monitoring was performed.

94. Initial Compliance Audit. Within nine months of the Date of Lodging, Shell shall complete a Refinery-wide initial compliance audit, conducted by a third party, for each Refinery, to determine compliance with the LDAR Regulations and the requirements of the applicable sections of this Consent Decree. For purposes of this requirement, "third party" may include a qualified contractor, consultant, industry group, or trade association.

a. Reporting Requirements for the Initial Compliance Audit. Within 30 days of the completion of an initial compliance audit, Shell shall submit to EPA and the applicable State permitting authority a report which summarizes the audit and lists any areas of non-compliance identified as a result of the audit. The report shall also include a proposed

compliance schedule for correcting the non-compliance. If the proposed compliance schedule extends greater than 60 days beyond the audit completion date, Shell must provide a reason for the delay(s) in correcting specific items and seek approval of the compliance schedule from EPA. Shell shall implement the compliance schedule as proposed as soon as possible for those items that do not take longer than 60 days from the audit completion date to correct. For items that will take longer than 60 days from the audit completion date to correct, Shell shall begin the process of correction as soon as possible and implement the compliance schedule as proposed until the schedule is approved or disapproved by EPA.

b. Initial Certification of Compliance. Within 90 days of completing an initial compliance audit, Shell shall certify to EPA that: (i) the Refinery is in compliance with the LDAR Regulations; (ii) Shell has completed related corrective action and/or is on a compliance schedule (if necessary); and (iii) all existing equipment has been identified and included in the Refinery's LDAR Program, to the extent required by the LDAR Regulations and this Consent Decree, as of the date such certification is made.

95. Subsequent LDAR Audits.

a. Internal LDAR Audits. Shell shall conduct internal LDAR audits at each Refinery by having a third party or company personnel from outside that Refinery determine Shell's compliance with the LDAR Regulations and the requirements of this Section. At each Refinery, Shell shall complete the first internal LDAR audit no later than two years after the initial compliance audit was due to be completed. Shell shall conduct internal LDAR audits in the same Calendar Quarter at least once every four years thereafter.

b. Third-Party LDAR Audits. For each Refinery, Shell shall retain an independent contractor(s) to complete a third-party LDAR audit no later than four years after the

initial compliance audit required under Paragraph 94 was due to be completed. Shell shall conduct third-party LDAR audits in the same Calendar Quarter at least once every four years thereafter.

c. Reporting Requirements for the Subsequent Audits. Within 30 days of the completion of an internal or third-party LDAR audit, Shell shall submit a report to EPA and the applicable State which summarizes the audit and lists any areas of non-compliance identified as a result of the audit. The report shall also include a proposed compliance schedule for correcting the non-compliance. If the proposed compliance schedule extends greater than 60 days beyond the audit completion date, Shell must provide a reason for the delay(s) and seek approval of the compliance schedule from EPA. Shell shall implement the compliance schedule as proposed as soon as possible for those items that do not take longer than the 60 days from the audit completion date to correct. For items that will take longer than the 60 days to correct, Shell shall begin the process of correction as soon as possible and implement the compliance schedule as proposed until the schedule is approved or disapproved by EPA.

d. Certification of Compliance. Within 90 days of completing each audit, Shell shall certify to EPA that: (i) the Refinery is in compliance with the LDAR Regulations; (ii) Shell has completed related corrective action and/or is on a compliance schedule (if necessary); and (iii) all existing equipment has been identified and included in the Refinery's LDAR Program, to the extent required by the LDAR Regulations and this Consent Decree, as of the date such certification is made.

F. Implementation of Actions Necessary to Correct Non-Compliance.

96. If any of the audits conducted pursuant to Paragraphs 94 or 95 or identify any areas of non-compliance with, or any violations (e.g., failure to record a leak, failure to repair,

failure to re-monitor after a repair) of, the LDAR Regulations, Shell will implement, as soon as practicable but no later than 30 days after completion of the audit report, all steps necessary to correct the area(s) of non-compliance or the violations. For purposes of this Paragraph, if the ratio of a process unit's component leak percentage established through a comparative monitoring audit and the average component leak percentage reported for the process unit for the four quarters immediately preceding the audit, is equal to or greater than 3.0, EPA will consider Shell not in compliance with the LDAR Regulations for that respective process unit and will require Shell to implement corrective actions. If the calculated ratio yields an infinite result, Shell will assume one leaking component was found in the process unit through its routine monitoring during the preceding 4-quarter period.

97. Retention of Audit Reports and Records Showing Corrective Actions and Completion Dates. Until termination of the Consent Decree, Shell shall retain the audit reports generated pursuant to Paragraphs 94 and 95 and maintain a written record of the corrective actions taken in response to any deficiencies identified in any audits, including but not limited to, the personnel conducting the corrective action, a brief description of the corrective action, and the date of the corrective action.

G. <u>Internal Leak Definition for Valves and Pumps.</u>

98. Shell shall utilize the following internal leak definitions for valves and pumps in light liquid and/or gas/vapor service, unless a lower leak definition is established under applicable permit(s), applicable state LDAR Regulations or future regulations, within six months of the Date of Lodging.

a. Leak Definition for Valves. Shell will use an internal leak definition of 500 ppm VOCs for refinery valves in light liquid and/or in gas/vapor service.

b. Leak Definition for Pumps. Shell will use an internal leak definition of 2,000 ppm for refinery pumps in light liquid and/or in gas/vapor service.

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

99. Reporting. For regulatory reporting purposes, Shell 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 98. For purposes of compliance with this Consent Decree, however, Shell must report leak rates in valves and pumps using the lower leak definitions in Paragraph 98 in the semi-annual report required in Paragraph 116 and in the audit reports required in Paragraphs 94 and 95.

100. Recording, Tracking, Repairing and Remonitoring Leaks. Within six months of the Date of Lodging, Shell shall record, track, repair and remonitor all leaks in excess of the internal leak definitions of Paragraph 98 in accordance with applicable provisions of the LDAR Regulations, except that Shell shall have five (5) days to make an initial attempt at repair, and 15 days either to make final repairs and remonitor the leak or to manage the leak according to Paragraph 114 (Extended Maintenance or Delay of Repair).

I. First Attempt at Repair on Valves.

101. Beginning no later than six months after the Date of Lodging, Shell will make a first attempt at repair within five calendar days for each valve that is monitored that has a reading of > 200 ppm VOCs, excluding control valves and orbit valves. Shell will remonitor each valve within five (5) calendar days of identification (i.e., reading > 200 ppm). If the remonitored leak rate is less than or equal to 500 ppm, no further action will be necessary. If the re-monitored leak reading is greater than the applicable leak definition, Shell shall repair the leaking valve

according to the requirements in Paragraph 100 (Recording, Tracking, Repairing and Remonitoring Leaks).

102. For each first attempt at repair, Shell shall record the date the valve was monitored in excess of 200 ppm, the date the first repair was attempted, the date the valve was remonitored and the remonitored value (in ppm). Shell shall maintain all records of repairs, repair attempts, and remonitoring until termination of the Consent Decree.

J. LDAR Monitoring Frequency.

103. Pumps: Unless more frequent monitoring is required by federal or State regulation, when the lower internal leak definition for pumps becomes applicable pursuant to Paragraph 98, Shell shall begin monitoring pumps in light liquid service, other than dual mechanical seal pumps or pumps vented to a control device, at the lower leak definition on a monthly basis.

104. Valves: Unless more frequent monitoring is required by federal or State regulation, when the lower internal leak definition for valves becomes applicable pursuant to Paragraph 98, Shell shall begin monitoring valves in light liquid service, other than difficult to monitor or unsafe to monitor as defined in the LDAR Regulations, at the lower leak definition on a quarterly basis.

K. Electronic Monitoring, Storing, Reporting, and QA/QC of LDAR Data.

105. Electronic Storing and Reporting of LDAR Data. By no later than the Date of Entry, at each Refinery, Shell will store and report all LDAR data, including monitoring, repair, and component inventory data, in an electronic database and submit such data, in electronic form, to EPA upon request.

106. Electronic Data Collection During LDAR Monitoring. By no later than the Date of Entry, at each Refinery, Shell will use dataloggers and/or electronic data collection devices during LDAR monitoring. Shell will transfer, on a daily basis, electronic data from electronic datalogging devices to the electronic database required by Paragraph 105. For all monitoring events in which an electronic data collection device is used, the collected monitoring data will include an accurate time and date stamp, operator identification, and instrument identification. Shell may use paper logs on an as-needed basis where necessary or more feasible (e.g., small rounds, remonitoring, or when dataloggers are not available or broken). When using paper logs, Shell will identify the technician undertaking the monitoring, the date, time, and the monitoring equipment. Shell will transfer any manually recorded monitoring data to the electronic database within seven (7) days of monitoring.

107. QA/QC of LDAR Data. By no later than sixty (60) days after the Date of Lodging, at each Refinery Shell will develop and implement a protocol to ensure a quality assurance/quality control (QA/QC) review of all data generated by each LDAR monitoring technician. This QA/QC protocol shall require:

a. Monitoring technician(s) will review and certify daily the accuracy of the monitoring data collected; and

b. non-monitoring personnel to review monitoring data quarterly, including, but not limited to, number of components monitored per technician, time between monitoring events and abnormal data patterns.

L. <u>LDAR Personnel.</u>

108. By no later than the Date of Lodging, Shell will establish a program that will hold LDAR personnel accountable for LDAR performance. Shell will identify an employee or

position within each Refinery (the "LDAR Coordinator") who is responsible for LDAR management and who has the authority to implement improvements in that Refinery's LDAR Program.

M. Adding New Valves and Pumps.

109. Beginning no later than six months after the Date of Lodging, Shell will continually incorporate into each Refinery's LDAR Program all valves and pumps subject to the LDAR Regulations that are added during maintenance and/or construction. Such valves and pumps will become subject to the lower leak definitions once in service and should be included in the next regularly scheduled monitoring. To ensure this incorporation, Shell will establish at each Refinery a program to track maintenance records, which may be incorporated into the Refinery's existing Management of Change programs.

N. Calibration/Calibration Drift Assessment.

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

111. Calibration Drift Assessment. Within six months of the Date of Lodging, at each Refinery, Shell shall conduct calibration drift assessments of all LDAR monitoring equipment at the end of each monitoring shift, at a minimum. Shell shall conduct the calibration drift assessment using a calibration gas corresponding to the then-applicable leak definition for valves. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, Shell shall remonitor the following equipment: (a) all valves subject to the LDAR Regulations and this Consent Decree that were monitored since the last calibration and that had a reading greater than 500 ppm if the applicable leak definition

for valves is 10,000 ppm, or 100 ppm if the applicable leak definition for valves is 500 ppm; and (b) all pumps qualifying as equipment that were monitored since the last calibration and that had a reading greater than 2,000 ppm if the applicable definition for pumps is 10,000 ppm, or 500 ppm if the applicable leak definition for pumps is 2,000 ppm.

O. Fixing Leaking Valves.

112. Chronic Leakers. Shell will replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after they are identified as chronically leaking. A component is chronically leaking under this Paragraph if it leaks above 5,000 ppm twice between unit turnarounds.

113. Drill and Tap for Valves Leaking at a Rate of 10,000 ppm VOC or Greater. Beginning no later than 90 days from the Date of Lodging, Shell will use a "drill and tap" or equivalent method for fixing valves that have a reading of > 10,000 ppm, unless Shell can demonstrate and documents that there is a safety, mechanical, or adverse environmental concern posed by attempting to repair the leak in this manner. Shell will perform the first "drill and tap" (or equivalent repair method) within fifteen (15) days, and a second attempt (if necessary) within thirty (30) days after the leak is detected. If a new method develops for repairing such valves, Shell will advise EPA prior to implementing the use of such new method in place of drill and tap for repairs required under this Consent Decree.

P. Extended Maintenance and Delay of Repair

114. Beginning no later than 90 days from Date of Lodging, Shell shall meet the requirements of this Paragraph before placing any component on a delay of repair list under the LDAR Regulations and this Consent Decree. If, after having implemented subparagraph (b) of this Paragraph, Shell still finds that one or more of the extended leak repair techniques identified

therein cannot repair the leak, Shell may delay repair of the leak until the next process unit shutdown.

a. For all equipment, including valves:

(1) Require sign-off by the Area Manager or designee that the equipment is technically infeasible to repair without a process unit shutdown;

(2) Continue to monitor equipment placed on the "delay of repair" list in the regular LDAR monitoring program; and

(3) Provide a list of all equipment designated under (a)(1) and the monitoring results required under (a)(2) for each component in the semi-annual report required under Paragraph 117.

b. For valves: For valves, other than control valves and pressure relief valves, require use of "drill and tap" or similarly effective repairs, unless the valve can be repaired by other means or Shell can demonstrate and records, with supporting material, that there is a safety, mechanical, or adverse environmental concern posed by attempting to repair the leak in this manner. Shell shall perform at least two "drill and tap" attempts (or similarly effective repairs) within fifteen (15) days of identification of the leak, if necessary, to repair the valve. If a new method develops for repairing such valves, Shell will advise EPA prior to implementing the use of such new method in place of drill and tap for repairs required under this Decree. Shell shall report the circumstances of all leaks attempted to be repaired under this Paragraph in the semiannual reports required under Paragraph 116 .

115. At no time shall more than 0.2% of a Refinery's valves be in a delay of repair status.

Q. Recordkeeping and Reporting Requirements for this Section.

116. For at least two years following termination of this Consent Decree, Shell shall maintain all records that document its compliance with the requirements of this Consent Decree, including but not necessarily limited to, the records listed in Paragraph 117 below.

117. In addition to the information required under 40 C.F.R. §§ 60.487 and 63.654 (Semi-Annual LDAR Report) or any other applicable regulatory reporting requirement, Shell will submit to EPA, the applicable EPA Regional Office, and the applicable State agency:

a. As part of the next scheduled semi-annual LDAR report after the applicable compliance date for each requirement:

i. A copy of the LDAR Program required by Paragraph 88;

ii. A certification of its implementation of the training requirements of Paragraph 91;

iii. A certification of its implementation of the "first attempt at repair" requirements of Paragraph 101

iv. A certification that Shell uses electronic data collection devices during LDAR monitoring, pursuant to the requirements of Paragraphs 105 and 106

v. A certification that Shell has implemented the provisions of Paragraphs 105, 106 and 107 regarding electronic monitoring collecting, storing, reporting, and QA/QC of LDAR data

vi. A certification that Shell has established at each Refinery a tracking program for maintenance records, as required by Paragraph 1009; and

vii. A certification of the implementation of the calibration and calibration drift assessment procedures of Paragraphs 110 and 111.

b. As part of the reports required under 40 C.F.R. §§ 60.487 and 63.654 (Semi-Annual LDAR Report) or any other applicable regulatory reporting requirement:

i. Audit Information. The audit report for any audit that was conducted pursuant to the requirements of Paragraphs 93, 94 and 95 in the previous semiannual period; identification of the actions that Shell has taken to correct each deficiency identified in the audit, including the date such action was completed; and identification of each action Shell intends to take but has not yet taken to correct deficiencies identified in the audit.

ii. Training. A description of the measures taken to comply with the provisions of Paragraph 91 in the previous six-month period.

iii. An identification of the individual, by name and title, at each Refinery responsible for LDAR performance during the applicable reporting period as required by Paragraph 108 (LDAR Personnel);

iv. A certification that Shell has incorporated all valves and pumps added during maintenance and construction into each Refinery's LDAR Program as required by Paragraph 109;

v. Monitoring. A description of:

(a) The process units monitored during the reporting period;

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

(c) The number of valves and pumps monitored in each process unit and an explanation, if less than the number in v(b);

(d) The number of valves and pumps found leaking using the internal leak definition levels in Paragraph 98;

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

(f) The percentage of "difficult to monitor" valves of the valves required to be monitored;

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

(h) A list of all pumps and valves currently on the "delay of repair" list, the date each component was placed on the list, the date each component was determined to be leaking above the applicable leak definition, the date of each drill and tap or equivalent method of repair, the date of an extended maintenance activity and the corresponding circumstances, the component's associated monitoring results throughout the 6 month period, and whether such activities were completed in a timely manner under Paragraphs 114 and 115;

(i) A list of all first attempts and the re-monitoring dates under Paragraph 101;

(j) The number of missed or untimely repairs under Paragraph 100 (Recording, Tracking, Repairing, and Remonitoring Leaks); and

(k) The number of missed or untimely repairs under Paragraphs 112 (Chronic Leakers) and 113.

R. Excluded Equipment.

118. The requirements in this Section do not apply to valves and pumps that are expressly exempt under the LDAR Regulations. In addition, nothing in this Consent Decree is intended to require Shell to monitor difficult to-monitor valves or unsafe-to-monitor valves more frequently than is otherwise required under the LDAR Regulations.

S. New Monitoring Technologies.

119. New Monitoring Technologies. Shell may propose a protocol for a pilot project at either or both Refineries to demonstrate that an optical imaging-based LDAR program is an equivalent or better means than a Method 21-based program in reducing VOC emissions from Refinery equipment and in monitoring for emissions of VOCs at the internal leak definition levels of Paragraph 98. This protocol may include a modified schedule for implementing the provisions of this Section for specified process units. Any schedule modification shall be only to the extent needed to gather comparative data necessary for implementation of the pilot project and shall be in effect only for the duration of the data-gathering under the protocol. EPA has sole discretion to approve or disapprove all or parts of this protocol. Upon receiving EPA's approval of the entire protocol, Shell may implement the pilot project. Any such implementation must be in strict accordance with the approved protocol and must not be inconsistent with the

requirements of 40 C.F.R. §§ 60.18, 63.11, and 65.7, as amended on December 22, 2008. After any such pilot project is conducted, Shell must submit the full results, including complete data sets, to EPA. EPA will review the results. After EPA's review, EPA may, in its sole discretion, approve a change to a part or all of this Section IV.K. to take advantage of the new leak detection technology if EPA has determined that the completed pilot project has demonstrated that an optical imaging-based LDAR program is an equivalent or better means than a Method 21-based program in reducing VOC emissions from Refinery equipment using the internal leak definition levels of Paragraph 98. Any such modification to these LDAR provisions will be filed with the Court in accordance with the requirements of Paragraph 205.

T. Certification

120. All notices, reports or any other submissions required of Shell by this Section IV.K. shall be signed by either the person responsible for environmental management at the applicable Refinery or by a person responsible for overseeing implementation of this Decree, making the following certification:

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

121. The reporting requirements set forth in this Consent Decree do not relieve Shell of its obligation to any State, local authority, or EPA to submit any other reports or information required by the CAA, or by any other state, federal or local requirements.

V. STATE OF LOUISIANA BENEFICIAL ENVIRONMENTAL PROJECT

122. Community BEP.

a. Environmental Education. By no later than 30 days after the Date of Entry, Shell will donate funds in the total amount of $100,000 to the LDEQ to support the production of educational campaigns throughout the State of Louisiana that promote awareness of environmental concerns such as illegal dumping, storm water construction activities, ozone non-attainment, and/or other environmental concerns.

b. Emergency Operations. By no later than 30 days after the Date of Entry, Shell will donate funds in the total amount of $83,370 to the St. Charles Parish Emergency Operations Center (EOC) for the purchase and installation of two additional AM Radio Emergency Transmitters and Emergency Signs for the Montz area.

c. Teacher Workshops. By no later than 30 days after the Date of Entry, Shell will donate funds in the total amount of $10,000 to the Audubon Nature Institute of New Orleans to support its Teacher Workshops on Environmental Education program.

d. Replacement Project(s). If the donations described in this Paragraph are unable to be made due to infeasibility, such as inability of the recipient to accept the funds or discontinuation of the program to be funded, Shell and LDEQ may substitute one or more alternative BEPs.

123. Payment Certification.

a. No later than 30 days after payment is due under Paragraph 1, Shell will certify to EPA and LDEQ, in accordance with Section VIII (Reporting), that it has made the payments required in Paragraph 122.

b. In the event that Shell does not expend the full amount required by Paragraph 122 on the BEPs, Shell shall pay to the State of Louisiana a stipulated penalty equal to the difference between the amount expended on the BEPs as demonstrated in the certification required by Paragraph 123.a., and the amount required by Paragraph 122. This stipulated penalty shall be paid as provided in Paragraph X (Civil Penalty).

124. By signing this Consent Decree, Shell certifies that it is not required, and has no liability under any federal or State law or regulation or pursuant to any agreements or orders of any court, to undertake or develop the BEPs. Shell further certifies that it has not applied for or received, and will not in the future apply for or receive: (i) credit as a Supplemental Environmental Project or other penalty offset in any other enforcement action for the BEP; (ii) credit for any emissions reductions resulting from the BEP in any federal or State emissions trading or early reduction program; or (iii) a deduction from any federal or State tax based on its participation in, performance of, or incurrence of costs related to the BEP.

125. Public Statements. Shell agrees that in any public statements regarding this BEP, Shell must clearly indicate that the project is being undertaken as part of the settlement of an enforcement action for alleged violations of the Clean Air Act and corollary State laws and/or regulations.

VI. PERMITTING

126. Obtaining Permit Terms for Consent Decree Requirements. Shell shall submit applications to the relevant permitting authorities to incorporate the requirements for Qualifying Controls and other standards required by this Consent Decree into federally enforceable minor or major new source review permits or other permits (other than Title V permits) that are federally enforceable. For Consent Decree requirements and standards that become effective upon Date of

Entry, this requirement is effective no later than 180 days after the Date of Entry. For Consent Decree requirements and standards that become effective after Date of Entry, this requirement is effective as soon as practicable, but in no event later than 90 days after the effective date or establishment of any requirement or standards required by this Consent Decree. Upon issuance of such permit or in conjunction with such permitting under this Paragraph, Shell shall file any application necessary to incorporate the requirements of that permit into the Title V permit for the Refinery, in accordance with applicable State Title V rules.

127. Construction Permits. Shell will obtain all required, federally enforceable permits for the construction of the pollution control technology and/or the installation of equipment necessary to implement the requirements of this Consent Decree.

VII. USE OF EMISSION REDUCTIONS

128. Summary. This Section addresses the use of the emissions reductions, which will result from the installation and operation of the controls required by this Consent Decree ("CD Emissions Reductions"), for the purpose of emissions netting or emissions offsets.

129. General Prohibition. Shell shall not use any NO_x, SO_2, PM, VOC, or CO emissions reductions that result from any project conducted or controls utilized pursuant to this Consent Decree as netting reductions or emissions offsets in any PSD, major non-attainment, and/or synthetic minor New Source Review permit or permit proceeding, nor shall Shell obtain any emission reduction credits for such reductions.

130. Outside the Scope of the General Prohibition. Nothing in this Consent Decree is intended to prohibit Shell from seeking to:

a. use or generate netting reductions or emission offset credits from Refinery units that are covered by this Consent Decree to the extent that the proposed netting reductions or

emission offset credits represent the difference between the numeric emissions limitations set forth in or established pursuant to this Consent Decree for such Refinery units and the more stringent numeric emissions limitations that Shell may elect to accept for those Refinery units in a permitting process;

b. use or generate netting reductions or emission offset credits for Refinery units that are not subject to an emission limitation pursuant to this Consent Decree;

c. use emissions reductions from the installation of controls required by this Consent Decree in determining whether a project that includes both the installation of controls under this Consent Decree and other construction that occurs at the same time and is permitted as a single project triggers major New Source Review requirements; or

d. use CD Emission Reductions for Shell'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) that apply to Shell; provided, however, that Shell may not trade or sell any CD Emissions Reductions.

VIII. REPORTING AND RECORDKEEPING

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

132. Beginning thirty (30) days after the end of the first semiannual period after the Date of Entry and semi-annually thereafter on January 31 and July 31 until termination of this Consent Decree, Shell will submit to EPA and the applicable State Agency a progress report for each Refinery.

a. General. Each semi-annual report will contain:

i. a progress report on the implementation of the requirements of Section IV (Affirmative Relief/Environmental Projects);

ii. the results of emissions tests and annual average CEMS or PEMS data, in ppmvd at 3% O_2 lb/mmBTU and tons per year, conducted pursuant to Paragraph 19;

iii. a description of any problems anticipated with respect to meeting the requirements of Section IV (Affirmative Relief/Environmental Projects);

iv. for the St. Rose Refinery, a description of the status of the BEP being conducted under Section V; and

v. any such additional matters as Shell believes should be brought to the attention of EPA and the applicable State Agency.

b. Emissions Data. In the semi-annual report required to be submitted on July 31 of each year, Shell shall provide a summary of annual emissions data for the prior calendar year. The summary shall include:

i. NO_x, SO_2, CO and PM emissions in tons per year for each heater and boiler greater than 40 mmBTU/hr maximum fired duty;

ii. NO_x, SO_2, CO and PM emissions in tons per year as a sum for all heaters and boilers greater than 40 mmBTU/hr maximum fired duty;

iii. Identification of the Qualifying Controls installed or planned, with the date installed or planned;

iv. For the Saraland Refinery, SO_2 emissions in tons per year for the sulfur recovery plant;

v. SO_2 emissions in tons per year from all acid gas and tail gas incidents by flare;

vi. NO_x, SO_2, CO and PM emissions in tons per year as a sum for all other emissions units for which emissions information is required to be included in Shell's annual emissions summary and are not identified in (i) through (iv) of this Paragraph; and

vii. The basis for each estimate required in this subparagraph (e.g., stack tests, CEMS, PEMS, etc.) and an explanation of methodology used to calculate the tons per year emitted.

To the extent that the required emissions summary data is available in other reports generated by Shell, such other reports can be attached or the appropriate information can be extracted from such other reports and attached to the semi-annual report to satisfy the requirement.

c. Exceedances of Emission Limits. In each semi-annual report, Shell shall identify each exceedance of an emission limit required or established by this Consent Decree that occurred during the previous semi-annual period. The semi-annual report shall include the following information:

i. For emissions units that are monitored with CEMS or PEMS, for each CEMS or PEMS:

(1) Total period where the emissions limit was exceeded, if applicable, expressed as a percentage of operating time for each Calendar Quarter;
(2) Where the operating unit has exceeded the emissions limit more than 1% of the total time of the Calendar Quarter, identification of each averaging period that exceeded the limit by time and date, the actual emissions of that averaging period (in the units of the limit, and any identified cause for the exceedance (including startup, shutdown, maintenance or malfunction), and, if

it was a malfunction, an explanation and any corrective actions taken;
(3) Total downtime of the CEMS or PEMS, if applicable, expressed as a percentage of operating time for the Calendar Quarter;
(4) Where the CEMS or PEMS downtime is greater than 5% of the total time in a Calendar Quarter for a unit, identify the periods of downtime by time and date, and any identified cause of the downtime (including maintenance or malfunction), and if it was a malfunction, an explanation and any corrective action taken;
(5) If a report filed pursuant to another applicable legal requirement contains all of the information required by this subsection (i) in a similar or same format, the requirements of this subsection (i) may be satisfied by attaching a copy of such report.

ii. For any exceedance of an emissions limit required by this Consent Decree from an operating unit monitored through stack testing:

(1) A summary of the results of the stack test in which the exceedance occurred;
(2) A copy of the full stack test report in which the exceedance occurred;
(3) To the extent that Shell has already submitted the stack test results, Shell need not resubmit them, but may instead reference the submission in the report (*e.g.*, date, addressee, reason for submission).

133. Each report shall be signed by Shell by either the person responsible for environmental management or by a person responsible for overseeing implementation of this Consent Decree, making the following certification:

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

IX. CIVIL PENALTY

134. In satisfaction of the civil claims asserted by the United States, the State of Alabama, and the State of Louisiana in the Complaint filed in this matter, by no later than 30 days after the Date of Entry, Shell shall pay a civil penalty of $1,000,000 to the United States, $622,000 to the State of Alabama and $184,630 to the State of Louisiana.

135. 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 the USAO File Number, DOJ Case Number 90-5-2-1-08703, and the civil action case name and number in the Southern District of Texas. The costs of such EFT shall be the responsibility of Shell. Payment shall be made in accordance with instructions provided to Shell by the Financial Litigation Unit of the United States Attorney's Office for the Southern District of Texas. Any funds received after 11:00 a.m. (EDT) shall be credited on the next business day. Shell shall provide notice of payment, referencing the USAO File Number, DOJ Case Number 90-5-2-1-08703, and the civil action case name and number, to the United States as provided in Paragraph 200 (Notice). Payment to the State of Louisiana shall be made by corporate check made payable to the Louisiana Department of Environmental Quality and sent to Darryl Serio, Fiscal Director, Office of Management and Finance, LDEQ, P.O. Box 4303, Baton Rouge, Louisiana 70821-4303. Payment to the State of Alabama shall be made by corporate check made payable to "Alabama Department of Environmental Management" and delivered to:

Alabama Department of Environmental Management
Office of General Counsel
Post Office Box 301463
Montgomery, Alabama 36130-1463

136. The civil penalty set forth herein, as well as any stipulated penalty incurred pursuant to Section X, is a penalty within the meaning of Section 162(f) of the Internal Revenue

Code, 26 U.S.C. § 162(f), and therefore Shell will not treat such penalty payment as tax deductible for purposes of federal or State law.

137. Upon the Date of Entry, this Consent Decree will constitute an enforceable judgment for purposes of post-judgment collection in accordance with Rule 69 of the Federal Rules of Civil Procedure, the Federal Debt Collection Procedures Act, 28 U.S.C. § 3001, et seq., and other applicable federal authority. The United States, the State of Alabama and the State of Louisiana will be deemed as judgment creditors for purposes of collecting any unpaid amounts of the penalty and interest pursuant to this Section, or any stipulated penalty owed pursuant to Section X.

X. STIPULATED PENALTIES

138. Shell shall pay stipulated penalties, as provided in this Section, to the United States and to the applicable Co-Plaintiff for each failure by Shell to comply with the terms of this Consent Decree. Stipulated penalties shall be calculated in the amounts specified in this Section. 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 is at the discretion of the United States.

A. Requirements for NO_x Emission Reductions

139. For failure to install Qualifying Controls, or failure to submit permit applications, as required by Paragraphs 12, 14, 15, and 16, per unit:

Period of Non-Compliance	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 non-compliance.

B. Requirements for SO_2 Emissions Reductions

140. For burning Fuel Oil in any combustion unit in violation of Paragraph 23 per unit, per day:

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

C. Requirements for Fuel Gas Combustion Devices

141. For failure to comply with NSPS Subpart A and J, in violation of Paragraph 24:

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

D. Requirements for Sulfur Recovery Plants

142. For failure to comply with the NSPS Subparts A and J emission limits at the Sulfur Recovery Plant, as specified in Paragraph 28 per unit, per day:

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

143. For failure to route or re-route all sulfur pit emissions in accordance with the requirements of Paragraph 29, 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.

144. For failure to develop or implement a Preventive Maintenance and Operation Plan, pursuant to Paragraph 31, 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

E. Requirements for Flaring Devices

145. For failure to comply with applicable NSPS Subparts A and J requirements, at the flares listed in Paragraph 32 after the Date of Entry, as set forth in Paragraph 32, per Flaring Device:

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

146. For failure to submit the NSPS Subpart J compliance certification as required by Paragraph 34, per Flaring Device:

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

F. Requirements for Benzene Waste NESHAP program enhancements

147. Requirements for Benzene Waste NESHAP program enhancements

a. For failure to timely conduct audit or compliance review and verification under Paragraphs 55 and 59: $5,000 per month per review/audit.

b. For failure to timely sample under Paragraph 64: $250 per week, per stream or $15,000 per quarter, per stream (whichever amount is greater, but not to exceed $75,000 per Refinery per quarter).

c. For failure to timely install carbon canister under subparagraph 57.a.: $1,000 per day per canister.

d. For failure to timely replace carbon canister under subparagraph 57.f.: $1,000 per day per canister

e. For failure to perform monitoring under subparagraph 57.e.: $500 per component per monitoring event.

f. For failure to develop the training program under Paragraph 60: $10,000 per quarter per Refinery.

g. For failure to timely implement the training program under Paragraph 60: $10,000 per quarter per Refinery.

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

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

i. If, after the initial audit, Shell or its agent discovers that Shell failed to include all benzene waste streams in its TAB, for each waste stream that is:

Less than 0.03 Mg/yr	$1,000 per stream;

Between 0.03 and 0.1 Mg/yr	$4,000 per stream;
Between 0.1 Mg/yr and 0.5 Mg/yr	$20,000 per stream;
Greater than 0.5 Mg/yr	$40,000 per stream

G. Requirements for Leak Detection and Repair Program

148. Requirements for Leak Detection and Repair Program:

a. For failure to have the written LDAR Program under Paragraph 88: $3,500 per week.

b. For failure to provide the training required by Paragraphs 91 and 92: $10,000 per month,

c. For failure to implement the requirements under Paragraphs 93 through 95 (Audits): $5,000 per month per audit.

d. For failure to implement the requirements under Paragraph 98 (Leak Definitions): $100 per component, up to $10,000 per month per process unit.

e. For failure to implement the requirements under Paragraphs 101 and 102 (First Attempt at Repair): $100 per component, up to $10,000 per month per process unit.

f. For failure to implement the requirements under Paragraphs 103 and 104 (Monitoring Frequency): $100 per component, up to $10,000 per month per process unit.

g. For failure to implement the requirements under Paragraphs 105 through 107: $5,000 per month per process unit.

h. For failure to implement the requirements under Paragraph 108: $3,750 per week.

i. For failure to implement the requirements under Paragraphs 110 and 111 (Calibration Drift Assessment): $100 per missed event per day.

j. For failure to attempt the drill and tap method under Paragraph 113: $5,000 per component.

k. For failure to comply with the requirement for chronic leakers set forth in Paragraph 112: $5,000 per valve.

l. For each valve in a delay of repair status exceeding the number allowed in Paragraph 115: $1000 per valve per Calendar Quarter.

m. If, after the initial audit required under Paragraph 94, an EPA or State investigator or inspector, or their agent, discovers that Shell failed to include a component in the LDAR program for monitoring within 120 days of the component's documented date of installation: $1500 per component.

n. If, after the initial audit required under Paragraph 94 Shell discovers that it failed to include a component in the LDAR program for monitoring within 120 days of the component's documented date of installation: $175 per component.

o. For failure to correctly perform EPA Test Method 21, as indicated by the leak percentage ratio determined through comparative monitoring and calculated as described in Paragraph 96

Ratio process unit valve leak percentage to average valve leak percentage reported for process unit (¶96)	Stipulated Penalty for 4-monitoring periods, per process unit
3.0	$3,333
4.0	$6,666
5.0	$12,000
6.0 or greater	$20,000

p. For failure to comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, as required in Paragraph 87 within six months after the Date of Lodging:

Period of Non-Compliance	Penalty per day
1st through 30th day	$750
31st through 60th day	$1,500
Beyond 60th day	$2,500 or an amount equal to 1.2 times the economic benefit of delayed compliance whichever is greater.

H. Requirements to Incorporate Consent Decree Requirements into Federally-Enforceable Permits

149. For each failure to submit a complete application as required by Paragraphs 126 and 127:

Period of Delay	Penalty per day
1st day through 30th day after deadline	$1,000
31st day through 60th day after deadline	$2,500
Beyond 60th day after deadline	$5,000

I. Requirements for Monitoring, Reporting and Recordkeeping

150. For failure to install, certify, calibrate, maintain in good working condition and/or operate a CEMS or PEMS, as required by Paragraphs 19, 20, and 25 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

151. For failure to comply with NSPS Subparts A and J monitoring requirements, as specified in Paragraphs 29 and 30.c per day:

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

152. For failure to submit reports in compliance with Section VIII (Reporting and Recordkeeping), per report, per day:

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

153. For failure to submit any written deliverable required by this Consent Decree, 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

J. Requirements to Pay Civil Penalties

154. For failure to make any civil penalty payment required by Section IX, Shell shall be liable for: $15,000 per day, and interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

K. Requirement to Pay Stipulated Penalties

155. For failure to pay stipulated penalties as required by this Section (Payment of Stipulated Penalties), unless Shell has timely invoked dispute resolution and escrowed the disputed stipulated penalties as provided in the dispute resolution provisions of Section XIV: $2,500 per day, per penalty, plus interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

L. General Provisions Related to Stipulated Penalties

156. Payment of Stipulated Penalties. Stipulated penalties under this Section will begin to accrue on the day after performance is due or on the day a violation occurs, whichever is applicable, and will continue to accrue until performance is satisfactorily completed or until the violation ceases.

157. Shell shall pay stipulated penalties upon written demand by the United States or the applicable Co-Plaintiff no later than 60 days after Shell receives such demand. Demand from either the United States or a Co-Plaintiff shall be deemed a demand from both. Shell shall pay stipulated penalties 50% to the United States and 50% to the applicable Co-Plaintiff. Stipulated penalties shall be paid in the manner set forth in Section IX (Civil Penalty) . A demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates, the stipulated penalty amount for each violation (as can be best estimated), the method by which it was calculated, and the basis for the demand. After consultation with each other, the United States and the applicable Co-Plaintiff may, in their unreviewable discretion, waive payment of all or any portion of stipulated penalties that accrue under this Consent Decree.

158. Stipulated Penalty Dispute. If Shell disputes its obligation to pay a demanded stipulated penalty, it may avoid the imposition of a stipulated penalty for failure to pay a stipulated penalty under Paragraph 157 by invoking the dispute resolution provisions of Section XIV within the time provided in Paragraph 157 for payment of stipulated penalties and by placing the disputed amount demanded in a commercial escrow account pending resolution of the matter. If the dispute is ultimately resolved in Shell's favor, the escrowed amount plus accrued interest shall be returned to Shell; otherwise, the United States and the applicable Co-

Plaintiff shall be entitled to the amount that was ultimately determined to be due, plus the interest that has accrued in the escrow account on such amount, with the balance, if any, returned to Shell. The payment of stipulated penalties shall not alter in any way Shell's obligation to comply with the other requirements of this Consent Decree.

159. Where a violation of this Consent Decree is also a violation of the Clean Air Act, its regulations, a State law, a State regulation, or a permit, the United States and the applicable Co-Plaintiff will not seek civil penalties where such party has already demanded and secured stipulated penalties from Shell for the same violations, nor will the United States nor the applicable Co-Plaintiff demand stipulated penalties from Shell for a Consent Decree violation if such party has commenced litigation under the Clean Air Act against Shell for the same violations.

XI. INTEREST

160. Shell shall be liable for interest on the unpaid balance of the civil penalty specified in Section IX, and/or interest on any unpaid balance of stipulated penalties to be paid in accordance with Section X. 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 this Consent Decree. Interest shall be computed daily and compounded annually. Interest shall be calculated from the date payment is due through the date of actual payment. For purposes of this Paragraph, interest will cease to accrue on the amount of any stipulated penalty payment placed into an interest-bearing escrow account as provided by Paragraph 158 (Stipulated Penalties Dispute).

XII. RIGHT OF ENTRY

161. Any authorized representative of EPA or the applicable State agency, upon presentation of credentials, shall have a right to enter the Refineries' facilities 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 Shell pursuant to this Consent Decree or deemed necessary by EPA or the applicable State agency to verify compliance with the Decree. Except where other time periods are specifically noted in this Consent Decree, Shell shall retain such records for the period of this Consent Decree. Nothing in this Consent Decree shall limit the authority of EPA or the applicable State agency to conduct tests, inspections, or other activities under any statutory or regulatory authority.

XIII. FORCE MAJEURE

162. For purposes of this Consent Decree, a "Force Majeure Event" shall mean an event that has been or will be caused by circumstances beyond the control of Shell, its contractors, or any entity controlled by Shell that delays compliance with any provision of this Consent Decree or otherwise causes a violation of any provision of this Consent Decree despite Shell's best efforts to fulfill the obligation. "Best efforts to fulfill the obligation" include using best efforts to anticipate any potential Force Majeure Event and to address the effects of any such event (a) as it is occurring and (b) after it has occurred, such that the delay or violation is minimized to the greatest extent possible.

163. Making a Claim of Force Majeure. Shell may make a claim that delay or non-compliance should be excused due to Force Majeure as provided in this paragraph. For any event that occurs, has occurred, or fails to occur that may delay compliance with or otherwise

cause a violation of any obligation under this Consent Decree, for which Shell intends to make a claim of Force Majeure, Shell shall so notify the United States and the applicable State agency in writing as soon as practicable, but in no event later than twenty business days following the date Shell first knew, or by the exercise of due diligence should have known, that the event caused or may cause such delay or violation. In this notice of claim, Shell shall reference this Paragraph and describe the anticipated length of time that the delay or violation may persist, the cause or causes of the delay or violation, all measures taken or to be taken by Shell to prevent or minimize the delay or violation, the schedule by which Shell proposes to implement those measures, and Shell's rationale for attributing a delay or violation to a Force Majeure Event. Shell shall adopt all reasonable measures to avoid or minimize such delays or violations. Shell shall be deemed to know of any circumstance which Shell, its contractors, or any entity controlled by Shell knew or should have known.

164. Failure to Make Timely Claim. If Shell materially fails to comply with the timeliness requirement of this Section, the United States may void Shell's claim for Force Majeure as to the specific event for which Shell has failed to comply with such requirement.

165. United States' Response. The United States, after an opportunity to consult with the applicable State agency, shall notify Shell in writing regarding Shell's claim of Force Majeure as soon as reasonably practicable.

a. Agreement. If the United States agrees that a delay in performance has been or will be caused by a Force Majeure Event, and that Shell could not have prevented the delay by the exercise of due diligence, the United States and Shell shall stipulate to an extension of deadline(s) for performance of the affected compliance requirement(s) by a period equal to the delay actually caused by the event. In such circumstances, an appropriate modification shall be

made pursuant to Paragraph 205 (Modification) of this Consent Decree. Shell shall not be liable for stipulated penalties for the period of any such delay.

b. Disagreement. If the United States does not accept Shell's claim of Force Majeure, or if the Plaintiffs and Shell cannot agree on the length of the delay actually caused by the Force Majeure Event, or the extent of relief required to address the delay actually caused by the Force Majeure Event, the matter shall be resolved in accordance with the dispute resolution provisions of Section XIV.

166. Burden of Proof. In any dispute regarding Force Majeure, Shell shall bear the burden of proving that any delay in performance or any other violation of any requirement of this Consent Decree was caused by or will be caused by a Force Majeure Event. Shell shall also bear the burden of proving that Shell gave the notice required by this Section and the burden of proving the anticipated duration and extent of any delay(s) attributable to a Force Majeure Event. 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.

167. Events Excluded. Unanticipated or increased costs or expenses associated with the performance of Shell's obligations under this Consent Decree, or Shell's financial inability to perform any obligations under this Consent Decree, shall not constitute Force Majeure Events.

168. Potential Force Majeure Events. Provided Shell has satisfied all requirements in Paragraphs 162-166, and other than as provided in Paragraph 167, the Parties agree that, depending upon the circumstances related to an event and Shell's response to such circumstances, the kinds of events listed below are among those that could qualify as Force Majeure Events within the meaning of this Section: construction, labor, or equipment delays; Malfunction of a Unit or emission control device; unanticipated fuel supply or pollution control

reagent/catalyst delivery interruptions; acts of God; and acts of war or terrorism. Depending upon the circumstances and Shell's response to such circumstances, failure of a permitting authority to issue a necessary permit in a timely fashion may constitute a Force Majeure Event where the failure of the permitting authority to act is beyond the control of Shell and Shell has taken all steps available to it to obtain the necessary permit, including, but not limited to: timely submitting a complete permit application; responding to requests for additional information by the permitting authority in a timely fashion; separating the pollution control permit application from application for other projects, e.g., expansion projects; and accepting lawful permit terms and conditions.

169. As part of the resolution of any matter submitted to this Court under the dispute resolution provisions of Section XIV regarding a claim of Force Majeure, the United States and Shell 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 any Force Majeure Event agreed to by the United States or approved by the Court. Shell shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XIV. RETENTION OF JURISDICTION/DISPUTE RESOLUTION

170. This Court shall retain jurisdiction of this matter for the purposes of implementing and enforcing the terms and conditions of this Consent Decree and adjudicating all disputes between and among the United States, the States, and Shell that may arise under the provisions of this Consent Decree until the Decree terminates in accordance with Section XVII.

171. The dispute resolution procedure set forth in this Section 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.

172. The dispute resolution procedure required herein shall be invoked by one Party giving to the other written notice of a dispute pursuant to this Section. The notice shall describe the nature of the dispute, and shall state the noticing Party's position with regard to such dispute.

173. 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 days from the date of the first meeting between representatives of the Parties, unless the Parties agree in writing that this period should be extended.

174. In the event that the Parties are unable to reach agreement during the informal negotiation period pursuant to Paragraph 173 the United States or the State, as applicable, shall provide Shell with a written summary of its position regarding the dispute. The position advanced by the United States or the State, as applicable, shall be considered binding unless, within 45 days of Shell's receipt of the written summary of the United States' or the State's position, Shell files with the Court a petition that describes the nature of the dispute. The United States or the State, as applicable, shall respond to the petition within 60 days of the petition's filing. The Court shall decide all disputes pursuant to applicable principles of law for resolving such disputes. In their initial filings with the Court under this Paragraph, the disputing Parties shall state their respective positions as to the applicable standard of law for resolving the particular issue or issues in dispute.

175. In the event that the United States and a State make differing determinations or take differing action that affect Shell's rights or obligations under this Consent Decree, the final decision of the United States shall take precedence.

176. As part of the resolution of any dispute under this Section, the Parties, by agreement, or the 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 the dispute resolution process. Shell shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XV. EFFECT OF SETTLEMENT

177. Definitions. For purposes of this Section, the following definitions apply:

a. "Applicable NSR/PSD Requirements" shall mean:

(i) 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;

(ii) Title V regulations that implement, adopt, or incorporate the specific regulatory requirements identified in Paragraph 177.a.(i).; any applicable federally-enforceable State regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 177.a.(i).; any Title V permit provisions that implement, adopt,

or incorporate the specific regulatory requirements identified in Paragraph 177.a.(i).; and

(iii) any applicable State laws or regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified in Paragraph 177.a.(i). regardless of whether such laws or regulations have been formally approved by EPA as part of the applicable State Implementation Plan.

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.

c. "Benzene Waste NESHAP Requirements" shall mean the requirements imposed by the National Emission Standard for Benzene Waste Operations, 40 C.F.R. Part 61, Subpart FF, and any applicable State regulations that implement, adopt or incorporate the Benzene Waste NESHAP.

d. "LDAR Requirements" shall mean the requirements relating to equipment in light liquid service and/or gas/vapor service set forth at 40 C.F.R. Part 60, Subpart GGG; 40 C.F.R. Part 61, Subparts J and V; and 40 C.F.R. Part 63, Subparts F, H and CC; and any applicable State regulations or State Implementation Plan requirements that implement, adopt or incorporate those federal regulations or set similar standards.

178. Liability Resolution 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 of Shell to the United States and the applicable Co-Plaintiff for violations of the Applicable NSR/PSD Requirements resulting from the construction or modification of the following units at the Saraland Refinery and the St. Rose Refinery where such violations commenced and ceased prior to the Date of Lodging of this Consent Decree or commenced prior to the Date of Lodging and continued no later than:

Units	Pollutant	Date
Heaters and Boilers	NO_x	Eight years after Date of Entry
Heaters and Boilers	SO_2	Date of Lodging

179. Reservation of Rights Regarding Applicable NSR/PSD Requirements: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void. Any release of liability in Paragraph 178 during the period between Date of Lodging and the post-lodging compliance dates shall be rendered void if Shell fails to materially comply with the corresponding obligations and requirements of Section IV.A. (relating to heaters and boilers). Such releases shall not be rendered void if Shell remedies such material failure and pays all stipulated penalties due as a result of such material failure.

180. Exclusions from Release Coverage Regarding Applicable NSR/PSD Requirements: Construction and/or Modification Not Covered. Notwithstanding the resolution of liability in Paragraph 178, nothing in this Consent Decree precludes the United States or the States from seeking injunctive relief, penalties, or other appropriate relief from Shell for violations by Shell of the Applicable NSR/PSD Requirements resulting from: (i) construction or modification that commenced prior to the Date of Lodging, if the resulting violations relate to pollutants or units not covered by the Decree; or (ii) any construction or modification that commences after the Date of Lodging.

181. Evaluation of Applicable NSR/PSD Requirements. Increases in emissions from units covered by this Consent Decree, which result from the Post-Lodging construction or modification of any units within either of the Refineries, are beyond the scope of the release in Paragraph 178, and Shell is not relieved of its obligation to evaluate any such increases in accordance with the Applicable NSR/PSD Requirements.

182. Resolution of Liability Regarding Applicable NSPS Requirements. With respect to emissions of the following pollutants from the following units at the Saraland Refinery and the St. Rose Refinery, entry of this Consent Decree shall resolve all civil liability of Shell to the United States and the applicable Co-Plaintiff for violations of the applicable NSPS Subparts listed below from the date that the Pre-Lodging claims of the United States accrued up to the specified Compliance Date:

Unit	Applicable Subpart	Pollutant	Date
All fuel gas combustion devices other than Flaring Devices	A and J	SO_2	Date of Lodging
Flaring Devices listed in Paragraph 32	A and J	SO_2	Date of Entry
SRPs except for Saraland sulfur pit	A and J	SO_2	Date of Entry
Saraland sulfur pit	A and J	SO_2	The earlier of December 31, 2013, or the Refinery's next planned full outage

183. Reservation of Rights Regarding Applicable NSPS Requirements: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void. Any release of liability in the previous Paragraph shall be rendered void if Shell fails to comply with the

obligations and requirements of Sections IV.B., IV.C., or IV.D. (relating to NSPS requirements). Such releases under Paragraph 182 shall not be rendered void if Shell remedies such failure and pays all stipulated penalties due as a result of such failure.

184. Resolution of Liability Regarding Benzene Waste NESHAP Requirements. Entry of this Consent Decree shall resolve all civil liability of Shell to the United States and the applicable Co-Plaintiff for violations of the statutory and regulatory requirements set forth in subparagraphs a – c at the Saraland Refinery and the St. Rose Refinery that (i) commenced and ceased prior to the Date of Lodging, or (ii) commenced prior to the Date of Lodging and continued past the Date of Lodging, provided that the events giving rise to such violations are identified by Shell in its Initial Compliance Review and Verification Report submitted pursuant to Paragraph 55 and corrected by Shell as required under Paragraph 56.

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;

b. Any applicable, federally-enforceable State regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified in subparagraph a. above.

c. Any applicable state regulations enforceable by a State that implement, adopt, or incorporate the specific federal regulatory requirements identified in subparagraph a. above.

185. Resolution of Liability Regarding LDAR Requirements. Entry of this Consent Decree shall resolve all civil liability of Shell to the United States and the applicable Co-Plaintiff for violations of the statutory and regulatory requirements set forth in subparagraphs a. - c. at the Saraland Refinery and the St. Rose Refinery that (i) commenced and ceased prior to the Date of Lodging, or (ii) commenced prior to the Date of Lodging and continued past the Date of Lodging, provided that the events giving rise to such violations are identified by Shell in its Initial Compliance Audit Report submitted pursuant to Paragraph 94 and corrected by Shell as required under Paragraph 96.

a. LDAR Requirements. For all equipment in light liquid and/or gas/vapor service, the LDAR requirements 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 regulations or permits that implement, adopt, or incorporate the specific regulatory requirements identified in subparagraph a. above; and

c. Any applicable State regulations or permits enforceable by the States that implement, adopt, or incorporate the specific regulatory requirements identified in subparagraph a. above.

186. Reservation of Rights Regarding Benzene NESHAP and LDAR Requirements. Notwithstanding the resolution of liability in Paragraph 185, nothing in this Consent Decree precludes the United States and/or the applicable Co-Plaintiff from seeking from Shell injunctive and/or other equitable relief or civil penalties for violations by Shell of Benzene Waste NESHAP and/or LDAR requirements at the Saraland Refinery and the St. Rose Refinery that (i)

commenced prior to the Date of Lodging and continued after the Date of Lodging if Shell fails to identify and address such violations as required by Paragraph 96, or (ii) commenced after the Date of Lodging.

187. Audit Policy. Nothing in this Consent Decree is intended to limit or disqualify Shell, on the grounds that information was not discovered and supplied voluntarily, from seeking to apply EPA's Audit Policy to any violations or noncompliance that Shell discovers during the course of any investigation, audit, or enhanced monitoring that Shell is required to undertake pursuant to this Consent Decree.

188. Claim/Issue Preclusion. In any subsequent administrative or judicial proceeding initiated by the United States or the Co-Plaintiffs for injunctive relief, penalties, or other appropriate relief relating to Shell for violations of the PSD/NSR, NSPS, NESHAP, and/or LDAR requirements not identified in this Part:

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

b. Except as set forth in subparagraph a., above, the United States and the States 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 Shell of any interpretation or guidance issued by EPA related to the matters addressed in this Consent Decree.

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

XVI. GENERAL PROVISIONS

190. Other Laws. Except as specifically provided by this Consent Decree, nothing in this Consent Decree shall relieve Shell of its obligations to comply with all otherwise applicable federal and State laws and regulations, including, but not limited to, more stringent standards. Nothing in this Consent Decree shall be construed to prohibit or prevent the United States or a State from developing, implementing, and enforcing more stringent standards subsequent to the Date of Lodging through rulemaking, the permit process, or as otherwise authorized or required under federal or State laws and regulations. Except as provided in Section XV (Effect of Settlement) and Paragraph 159, nothing contained in this Consent Decree shall be construed to prevent or limit any power of the United States or a State to seek or obtain other remedies or sanctions due to Shell's violation of this Consent Decree or of the statutes and regulations upon which this Consent Decree is based, or for Shell's violation of any applicable provision of law.

191. Startup, Shutdown, Malfunction. Notwithstanding the provisions in this Consent Decree regarding Startup, Shutdown, and Malfunction, Shell is not exempted from the requirements of State laws and regulations or from the requirements of any permits or plan approvals issued to Shell as such laws, regulations, permits, and/or plan approvals may apply to Startups, Shutdowns, and Malfunctions at the Refineries.

192. Post-Permit Violations. Nothing in this Consent Decree shall be construed to prevent or limit the right of the United States or a State to seek injunctive or monetary relief for violations of limits that have been incorporated into permits pursuant to this Consent Decree.

193. Failure of Compliance. The United States and the States do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Shell's complete compliance with the terms of the Decree will result in compliance with the provisions of the CAA or comparable State statutes and regulations Notwithstanding the review or approval by EPA or the applicable State agency of any plans, reports, policies, or procedures formulated pursuant to this Consent Decree, Shell shall remain solely responsible for compliance with the terms of this Consent Decree, all applicable permits, and all applicable federal and State laws and regulations, except as provided in Part XIII (Force Majeure).

194. Changes to Law. In the event that during the life of this Consent Decree there are changes in the statutes or regulations that provide the underlying basis for the Consent Decree such that Shell would not otherwise be required to perform any of the obligations herein or would have the option to undertake or demonstrate compliance in an alternative or different manner, Shell may petition the Court for relief from any such requirements, in accordance with Rule 60 of the Federal Rules of Civil Procedures. However, if Shell applies to the Court for relief under this Paragraph, the United States reserves the right to seek to void all or part of the Resolution of Liability reflected in Section XV. Nothing in this Paragraph is intended to enlarge the Parties' rights under Rule 60, nor does this Paragraph confer on any Party any independent basis, outside of Rule 60, for seeking such relief.

195. Service of Process. Shell hereby agrees to accept service of process by mail with respect to all matters arising under or relating to this 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 Shell in Paragraph 201 (Notice) are authorized to accept service of process with respect to all matters arising under or relating to this Consent Decree.

196. Post-Lodging, Pre-Entry Obligations. Obligations of Shell under this Consent Decree to perform duties after the Date of Lodging but prior to the Date of Entry shall be legally enforceable only on or after the Date of Entry. Liability for stipulated penalties, if applicable, shall accrue for violations of such obligations, and the United States or the applicable State may demand payment as provided in the Decree, provided that stipulated penalties accruing between the Date of Lodging and the Date of Entry may not be collected unless and until this Decree is entered by the Court.

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

198. Public Documents. All information and documents submitted by Shell pursuant to this Consent Decree shall be subject to public inspection in accordance with applicable federal law, unless subject to legal privileges or protection, or identified and supported as trade secrets or confidential business information in accordance with the applicable federal statutes or regulations.

199. Public Notice and Comment. Final approval of this Consent Decree by Co-Plaintiff State of Louisiana is subject to the requirements of La. R.S. 30:2050.7, which provides for public notice of this Consent Decree in newspapers of general circulation and the official journal of the parish in which the St. Rose Refinery is located, an opportunity for public comment, consideration of any comments, and concurrence by the State Attorney General. This Consent Decree shall be lodged with the Court for a period of public notice and comment in

accordance with 28 C.F.R. § 50.7. The United States and the State of Louisiana reserve the right to withdraw or withhold their consent to this Consent Decree if public comments disclose facts or considerations indicating that this Consent Decree is inappropriate, improper, or inadequate. Shell consents to entry of this Consent Decree without further notice and agrees not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Consent Decree, unless the United States has notified Shell in writing that it no longer supports entry of the Consent Decree.

200. 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 or overnight mail, postage prepaid, except for notices under Section XIII ("Force Majeure") and /Section XIV ("Retention of Jurisdiction/Dispute Resolution"), which shall be sent by overnight mail or by certified or registered mail, return receipt requested. By agreement between Shell and each of the offices that is to receive such notifications and communications, Shell may submit these materials electronically.

201. Notifications to or communications mailed to Shell shall be deemed to be received on the earlier of (i) actual receipt by Shell or (ii) receipt of an electronic version sent to the addressees set forth in this paragraph. Each report, study, notification, or other communication of Shell shall be submitted as specified in this Consent Decree. If the date for submission of a report, study, notification, or other communication falls on a Saturday, Sunday, or federal or State holiday, the report, study, notification, or other communication will be deemed timely if it is submitted the next Working Day. Except as otherwise provided herein, all reports, notifications, certifications, or other communications required or allowed under this Consent Decree 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. 90-5-2-1-08703

Director
Air Enforcement Division
Office of Civil Enforcement (2242A)
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20004

and an electronic copy, in .pdf format, to:

Director
Air Enforcement Division
Office of Civil Enforcement
c/o Matrix New World Engineering, Inc.
120 Eagle Rock Ave., Suite 207
East Hannover, NJ 07936-3159

and an electronic copy, in .pdf format, to:

csullivan@matrixneworld.com

As to EPA Region 4:
Director, Air, Pesticides and Toxics Management Division
U.S. EPA Region 4
61 Forsyth Street S.W.
Atlanta, GA 30303

As to EPA Region 6:
Chief, Air, Toxics and Inspection Coordination Branch
U.S. EPA Region 6 (6EN-A)
1445 Ross Avenue
Dallas, TX 75202-2733

As to ADEM:
Ronald W. Gore
Chief, Air Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

As to LDEQ:
Administrator, Enforcement Division
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P.O. Box 4312
Baton Rouge, LA 70821-4312

As to Shell:
Mike Gallagher
Regional Manager HSSE Americas
Shell Downstream
One Shell Plaza – Room 1248B
Houston, TX 77002

and electronic copies to pierre.espejo@shell.com and
jdomike@wallaceking.com

202. Any Party may change either the notice recipient or the address for providing notices to it by serving the other Party with a notice setting forth such new notice recipient or address. In addition, the nature and frequency of reports required by this 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.

203. Approvals. All EPA approvals or comments required under this Consent Decree shall be in writing.

204. 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.

205. 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 this Consent Decree will not be used in any action involving the interpretation or enforcement of the Decree. Non-material modifications to this Consent Decree will be effective when signed by the United States and Shell. 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 the United States and Shell. Material modifications to this Consent Decree will be in writing, signed by the United States, the applicable State, and Shell, 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.

206. Effect of Shutdown. The permanent Shutdown of an emissions unit or equipment and the surrender of all permits for that emissions unit or equipment shall be deemed to satisfy all requirements of this Consent Decree applicable to that emissions unit or equipment on and after the later of: (i) the date of the Shutdown of the emissions unit or equipment; or (ii) the date of the surrender of all permits applicable to the unit or piece of equipment. The permanent Shutdown of a Refinery and the surrender of all air permits for the Refinery shall be deemed to

satisfy all requirements of this Consent Decree applicable to the Refinery on and after the later of: (i) the date of the Shutdown of the Refinery; or (ii) the date of the surrender of all air permits.

XVII. TERMINATION

207. Certification of Completion: Applicable Sections. Prior to moving for termination under Paragraph 212, Shell may seek to certify completion of one or more of the following Sections of the Consent Decree for each Refinery.

a. Sections IV.A through IV.B – Combustion Units (including operation of the relevant units for one year after installation of Qualifying Controls pursuant to the Consent Decree);

b. Sections IV.C. through IV.D. - SRPs and Flares;

c. Sections IV.I. through IV.K. (Benzene and LDAR); and

d. Section V. –Beneficial Environmental Project.

208. Certification of Completion: Shell Actions. If Shell concludes that any of the subsections of the Consent Decree identified in Paragraph 207 have been completed, Shell may seek certification of completion by submitting a written report to EPA and the applicable State agency describing the activities undertaken and certifying that the applicable Section(s) have been completed in full satisfaction of the requirements of this Consent Decree, and that Shell is in substantial and material compliance with all of the other requirements of the Consent Decree. The report will contain the following statement, signed by a responsible corporate official of Shell.

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

209. Certification of Completion: EPA Actions. Upon receipt of Shell's certification, EPA will notify Shell whether the requirements set forth in the applicable Section have been completed in accordance with this Consent Decree.

a. If EPA concludes that the requirements have not been fully complied with, EPA will notify Shell as to the activities that must be undertaken to complete the applicable Section of the Consent Decree. Shell will perform all activities described in the notice, subject to its right to invoke the dispute resolution procedures set forth in the dispute resolution provisions of Section XIV; and/or

b. If EPA concludes that the requirements of the applicable Section have been completed in accordance with this Consent Decree, EPA will so certify in writing to Shell. This certification will constitute the certification of completion of the applicable Section for purposes of this Consent Decree. The parties recognize that ongoing obligations under such Sections remain and necessarily continue (e.g., reporting, recordkeeping, training, auditing requirements), and that Shell's certification is that it is in current compliance with all such obligations.

210. Certification of Completion: No Impediment to Stipulated Penalty Demand. Nothing in Paragraphs 207 and 208 will preclude the United States 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 Paragraph 209.b. In addition, nothing in this Paragraph will permit Shell to fail to implement any ongoing obligations under the Consent Decree regardless of whether a Certification of Completion has been issued.

211. Termination: Conditions Precedent. This Consent Decree will be subject to termination upon motion by the Parties or upon motion by Shell alone under the conditions

identified in this Paragraph. Prior to seeking termination, Shell must have completed and satisfied all of the following requirements of this Consent Decree:

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

b. Compliance with all provisions contained in this Consent Decree. Such compliance may be established for specific parts of the Consent Decree in accordance with Paragraphs 207 through 209;

c. Payment of all penalties and other monetary obligations due under the terms of the Consent Decree;

d. Completion of the Beneficial Environmental Project under Section V;

e. Application for and receipt of permits incorporating the emission limits and standards established under this Consent Decree; and

f. Operation for at least one 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.

212. Termination: Procedure. At such time as Shell believes that it has satisfied the requirements for termination set forth in Paragraph 211, Shell will certify such compliance and completion to the United States and the applicable State in accordance with the certification language of Paragraph 208. Unless either the United States or the applicable State objects in writing with specific reasons within one-hundred twenty (120) days of receipt of Shell's certification under this Paragraph, the Court may upon motion by Shell order that this Consent Decree be terminated. If either the United States or the applicable State objects to the certification by Shell, then the matter may be submitted to the Court for resolution under the

dispute resolution provisions in Section IV. In such case, Shell will bear the burden of proving that this Consent Decree should be terminated.

213. Obligations that Shall Survive Consent Decree Termination. The requirements imposed by the following provisions of this Consent Decree shall survive termination of the Consent Decree under this Section:

a. Paragraphs 14, 15, 19, and 20 of Section IV.A.

b. Paragraph 24 of Section IV.B.

c. Paragraphs 28, 29, 30, 31, 32, 37, 38, 39, and 49 of Sections IV.D. and IV.E.;

d. Paragraph 87 of IV.K.

e. All of Section VII. [Emissions Credits]

XVIII. SIGNATORIES

214. Each of the undersigned representatives certifies that he or she is fully authorized to enter into this Consent Decree on behalf of the applicable Party, and to execute and to bind such Party to this Consent Decree.

Dated and entered ~~this~~ _____ ~~day of~~ Oct. 28, 2010.

United States District Judge

WE HEREBY CONSENT to the entry of this Consent Decree in United States et al. v. Shell Chemical LP, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

Date: 1/12/10

IGNACIA S. MORENO
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

Date: 12-23-09

AMY R. GILLESPIE
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611

JOSE ANGEL MORENO
United States Attorney

KEITH EDWARD WYATT
Assistant United States Attorney
Chief, Civil Division
U.S. Attorney's Office
919 Milam Street, Suite 1500
P.O. Box 61129
Houston, TX 77208
Tel. (713) 567-9713
Fax (713) 718-3303

WE HEREBY CONSENT to the entry of this Consent Decree in United States et al. v. Shell Chemical LP, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Date: 3/30/10

CYNTHIA GILES
Assistant Administrator for Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
Washington, D.C. 20460

Date: 3/22/10

ADAM M. KUSHNER
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
Washington, D.C. 20460

Date: 3/12/10

PAMELA MAZAKAS
Acting Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
Washington, D.C. 20460

Date: 3/2/10

TERESA DYKES
Attorney, Air Enforcement Division
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
Washington, D.C. 20460

WE HEREBY CONSENT to the entry of this Consent Decree in United States, State of Alabama, and State of Louisiana v. Shell Chemical LP.

FOR THE STATE OF ALABAMA:

TROY R. KING, ATTORNEY GENERAL

By: _____ Date: 1/25/10
Robert D. Tambling
Assistant Attorney General
500 Dexter Avenue
Montgomery, AL 36130-1463

FOR THE ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT:

JOHN P. HAGOOD, DIRECTOR

By: _____ Date: 1-25-10
S. Shawn Sibley
Associate General Counsel
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

FINAL APPROVAL BY PLAINTIFF, THE STATE OF LOUISIANA, THROUGH THE DEPARTMENT OF ENVIRONMENTAL QUALITY:

BEAU JAMES BROCK
Assistant Secretary
Office of Environmental Compliance
Louisiana Department of Environmental Quality

Dated: 9/17/10

Dwana C. King (Bar Roll #20590)
Attorney
Christopher A. Ratcliff, (Bar Roll #18675)
Attorney Supervisor
Office of the Secretary
Legal Affairs Division
Louisiana Department of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302
Telephone No. (225) 219-3985
Fax. No. (225) 219-4068

Dated: 9-16-10

WE HEREBY CONSENT to the entry of this Consent Decree in United States, State of Alabama, and State of Louisiana v. Shell Chemical LP, subject to the public notice and comment requirements.

FOR SHELL CHEMICAL LP:

21st January 2010
Date

Robert Chouffot
President
Shell Chemical LP

APPENDIX A

List of Heaters and Boilers Greater Than 40 mmBTU Per Hour

Unit ID	Unit Description	Maximum Sustainable/Allowable Heat Input (mmBTU/hr)	2006 (lb/mmBTU)	2006 (TPY)	2007 (lb/mmBTU)	2007 (TPY)	2006-07 (TPY)	NOx Factor Basis: Basis	NOx Factor Basis: Time Period
Mobile									
Source S001	Utility Boiler No. 1	50.0	0.063	6.7	0.063	6.5	6.6	Stack test	3 by 1-hr
Source S002	Utility Boiler No. 2	50.0	0.114	10.6	0.114	10.7	10.6	Stack test	3 by 1-hr
Source S003	Utility Boiler No. 3	80.0	0.072	10.7	0.072	13.4	12.1	Stack test	3 by 1-hr
Source S005	No. 1 Crude Heater	144.0	0.082	43.0	0.082	38.8	40.9	Stack test	3 by 1-hr
Source S006	No. 1 Reformer Heater	250.0	0.046	39.7	0.046	36.4	38.1	Stack test	3 by 1-hr
Source S009	No. 2 Crude Heater	175.0	0.122	68.2	0.122	71.8	70.0	Stack test	3 by 1-hr
Source S010	Vacuum Tower Heater	80.0	0.039	11.4	0.039	11.4	11.4	Stack test	3 by 1-hr
Source S011	No. 2 Reformer Heater	123.0	0.100	49.3	0.100	44.7	47.0	Stack test	3 by 1-hr
Source S018	OFH Charge Heater	61.6	0.035	8.4	0.035	7.4	7.9	Stack test	3 by 1-hr
St Rose									
H-1	H-1, Atmospheric Column Heater (F-8501)	165.0	0.106	63.1	0.106	57.4	60.3	Stack test	3 by 1-hr
H-2	H-2, Vacuum Column Heater (F-8502)	65.0	0.094	21.0	0.094	21.6	21.3	Stack test	3 by 1-hr

APPENDIX B

PREDICTIVE EMISSIONS MONITORING SYSTEMS FOR HEATERS AND BOILERS WITH CAPACITIES BETWEEN 40 AND 150 MMBTU/HR

A Predictive Emissions Monitoring System ("PEMS") is a mathematical model that predicts the gas concentration of NOx in a particular unit's 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 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 in the Instrumentation Section below.

Instrumentation:

1. Absolute Humidity reading (one instrument per refinery, if available)
2. Fuel Density, Composition and/or specific gravity – On line readings (If the fuel gas does not vary widely, it may be possible for a grab sample and analysis to 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 and pressure, etc.

Computers & Software:

Collect and electronically store relevant data, listing the specifications for the hardware and software.

Calibration and Setup:

1. For a period of 7 to 10 days, collect data to be used to construct the mathematical model. The data must be collected over an operating range that represents 80% to 100% of the normal operating range of the heater/boiler;

2. Conduct a "Validation" analysis to make sure the system is collecting data properly;

3. Conduct Stack Testing to develop the actual emissions data for comparison to the collected parameter data; and

4. Develop the mathematical models and install the model into the computer.

A monitoring protocol for a PEMS will 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 C.F.R. 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.

ATTACHMENT B

it on fedearl register Fwd those who pollute should never get the right to bid on new oil leases
From: bk1492@aol.com
Sent: Saturday, April 10, 2010 2:29 PM
To: ENRD, PUBCOMMENT-EES (ENRD); Fleetwood, Tonia (ENRD); Katz, Maureen (ENRD); americanvoices@mail.house.gov; information@sierraclub.org; foe@foe.org; center@biologicaldiversity.org; comments@whitehouse.gov
Cc: indo@starmagazine.com; today@nbc.com
Subject: public comment on fedearl register Fwd: those who pollute should never
get the right to bid on new oil leases - they shuold be prohibited in all incarnations

you never even bother to tell the citizens of this country how much the settlement entails in this notice. i think no notice should be allowed without that basic information. i think you should have to republish with that information. i think the usdoj is very negligent. you have been told by obama to be "transparent". how is this notice "transparent?'it tells the public nothing. I also think the fines on these polluters need to be much higher and if they keep continuing the company should be forced out of business. every time they pollute they push people or earth closer to death. their product is toxic.
jean public 8 winterberry court whitehouse station nj 08889

[Federal Register: April 9, 2010 (Volume 75, Number 68)][Notices]
[Page 18239-18240]From the Federal Register Online via GPO Access [wais.access.gpo.gov][DOCID:fr09ap10-121]

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----------DEPARTMENT OF JUSTICE Notice of Proposed Consent Decree Under the Clean Air Act Notice is hereby given that on March 31, 2010, two proposed Consent Decrees were lodged. United States et al. v. Shell Chemical LP, Civil Action No. 4:10-cv-01042, was lodged with the United States District Court for the Southern District of Texas. United States v. Shell Chemical Yabucoa, Inc., Civil Action No. 3:10-cv-1268, was lodged with the United States District Court for the District of Puerto Rico.

The Consent Decrees in these Clean Air Act enforcement actions against Shell Chemical LP and Shell Chemical Yabucoa, Inc. (collectively ``Shell'') resolve allegations by the Environmental Protection Agency, asserted in complaints filed together with the Consent Decrees, under Section 113(b) of the Clean Air Act, 42 U.S.C. 7413(b), for alleged environmental violations at Shell Chemical LP's petroleum refineries in Saraland, Alabama and St. Rose, Louisiana, and at Shell Chemical Yabucoa, Inc.'s petroleum refinery in Yabucoa, Puerto Rico. The proposed Consent Decree in the Shell Chemical LP matter also resolves separate but related state law claims brought by co-plaintiffs Alabama and Louisiana. These are two of numerous national settlements reached as part of the EPA's Clean Air Act Petroleum Refinery Initiative. Consistent with the objectives of EPA's national initiative, in addition to the payment of civil penalties, the settlements require Shell to perform injunctive relief to reduce emissions of nitrogen oxides, sulfur dioxide, volatile organic compounds, and benzene. The Department of Justice will receive comments relating to the proposed Consent Decrees for a period of thirty (30) days from the date of this publication. Comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and either e-mailed to pubcomment-ees.enrd@usdoj.gov or mailed to P.O. Box 7611, U.S. Department of Justice, Washington, DC 20044-7611, and should refer to the matters as United States et al. v. Shell Chemical LP, DOJ Ref. No. 90-5-2-1-08703 and/or United States v. Shell Chemical Yabucoa, Inc.,

it on fedearl register Fwd those who pollute should never get the right to bid on new oil leases

DOJ. Ref. No. 90-5-2-1-08703/1. Both proposed Consent Decrees may be examined at the following Regional Offices of the United States Environmental Protection Agency: Region 2, 290 Broadway, New York, New York 10007-1866; Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, SW., Atlanta, GA 30303-8960; and Region 6, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202. The Consent Decree addressing Shell Chemical Yabucoa, Inc.'s facility in Yabucoa, Puerto Rico may also be examined at the Office of the United States Attorney, Torre Chardon, Suite 1201, 350 Carlos Chardon Avenue, San Juan, Puerto Rico 00918. During the public comment period, the proposed agreements may also be examined on the following Department of Justice Web site: http://www.usdoj.gov/enrd/Consent_Decrees.html. Copies of the proposed agreements may also be obtained by mail from the Consent Decree Library, P.O. Box 7611, U.S. Department of Justice, Washington, DC 20044-7611 or by faxing or e-mailing a request to Tonia Fleetwood (tonia.fleetwood@usdoj.gov), fax no.[[Page 18240]](202) 514-0097, phone confirmation number (202) 514-1547. In requesting from the Consent Decree Library a copy of the consent decree for United States et al. v. Shell Chemical LP, Civil Action No. 4:10-cv-01042 (S.D. Tx), please enclose a check in the amount of $29.25 (25 cents per page reproduction cost) payable to the U.S. Treasury. In requesting from the Consent Decree Library a copy of the consent decree for United States v. Shell Chemical Yabucoa, Inc., Civil Action No. 3:10-cv-1268, please enclose a check in the amount of $15.75 (25 cents per page reproduction cost) payable to the U.S. Treasury.Maureen Katz,Assistant Chief, Environmental Enforcement Section, Environment and Natural Resources Division.[FR Doc. 2010-8086 Filed 4-8-10; 8:45 am]BILLING CODE 4410-15-P