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IN THE DISTRICT COURT OF THE VIRGIN ISLANDS
DIVISION OF ST. CROIX

UNITED STATES OF AMERICA,	)	
	)	
and	)	CIVIL ACTION NO.
	)	
THE UNITED STATES VIRGIN ISLANDS	)	
	)	
Plaintiffs,	)	
v.	)	
	)	
HOVENSA L.L.C.	)	
	)	
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"), has simultaneously filed a Complaint against and lodged this Consent Decree against Defendant, HOVENSA L.L.C. ("HOVENSA"), for alleged environmental violations at the HOVENSA petroleum refinery in St. Croix, U.S. Virgin Islands ("Refinery");

WHEREAS, the United States alleges that HOVENSA 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 ("CAA" or the "Act"), 42 U.S.C. § 7475, and the regulations promulgated thereunder at 40 C.F.R. § 52.21 (the "PSD Rules");

2) New Source Performance Standards ("NSPS") found at 40 C.F.R. Part 60, Subparts A and J 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 fluid catalytic cracking unit catalyst regenerators;

3) 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");

4) 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");

WHEREAS, the United States also specifically alleges that, upon information and belief, HOVENSA has been and/or continues to be in violation of other territorial rules, regulations, and permits adopted or issued by the United States Virgin Islands to the extent that such rules, regulations, and permits implement, adopt, or incorporate the above-described federal requirements;

WHEREAS, the United States Virgin Islands ("Virgin Islands"), has sought to intervene in this matter alleging violations of its applicable State Implementation Plan ("SIP") provisions and/or other territorial rules, regulations, and permits incorporating and implementing the foregoing federal requirements;

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

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

WHEREAS, HOVENSA consents to the simultaneous filing of the Complaint and lodging of this Consent Decree, despite its denial of the allegations in the Complaint, to accomplish its objective of cooperatively reconciling the goals of the United States, the Virgin Islands and HOVENSA under the Clean Air Act and the corollary territorial statute, and therefore agrees to undertake the installation of air pollution control equipment and

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enhancements to its air pollution management practices to reduce air emissions by participating in the Global Settlement Strategy;

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

WHEREAS, the United States and the Virgin Islands anticipate that the affirmative relief and environmental projects identified in Part V (Affirmative Relief/Environmental Projects) will reduce annual emissions from HOVENSA's Refinery by the following amounts: 1) nitrogen oxides by approximately 5,031 tons per year; and 2) sulfur dioxide by approximately 3,460 tons per year.

WHEREAS, with respect to the provisions of Section V.K (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 Background 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 "Malfunctions," as defined in Paragraph 10 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 or Ja 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, EPA recognizes that the HOVENSA Refinery is located on an island in the Caribbean Sea which precludes the Refinery's access to natural gas and consequently its ability to limit burning fuel oil in Refinery heaters and boilers;

WHEREAS, as of the Date of Lodging, the Virgin Islands Territory is in attainment for all primary and secondary ambient air quality standards (40 C.F.R. § 81.356);

WHEREAS, Section 325 of the Clean Air Act provides that under certain circumstances an exemption for some requirements of the Act may be provided due to "unique geographical, meteorological, or economic factors of such [Virgin Islands] territory";

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

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

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

WHEREAS, EPA sought and HOVENSA provided a substantial amount of information concerning Refinery operations and configuration;

WHEREAS, the Parties engaged in numerous meetings over the past six (6) years to resolve this matter;

WHEREAS, the Parties acknowledge the following: (1) shortly before executing the Consent Decree, EPA adopted more stringent National Ambient Air Quality Standards (NAAQS) for NO_2 (75 Fed. Reg. 6474 (Feb. 9, 2010)), SO_2 (75 Fed. Reg. 35520 (June 22, 2010)), and issued a memorandum regarding demonstrating compliance with PM-2.5 NAAQS (March 23, 2010, "Modeling Procedures for Demonstrating Compliance with PM-2.5 NAAQS"); (2) the more stringent NO_2 and SO_2 NAAQS and PM-2.5 memorandum may affect HOVENSA's ability to timely obtain permits necessary to meet the compliance schedules set in Paragraphs 23 – 28, 34, 35, 135 (as to Boiler 5), and 136; and (3) the Parties do not intend to require the construction of any project required as a result of the NO_2 or SO_2 NAAQS or PM-2.5 memorandum to occur concurrently with the construction of projects required by Paragraphs 23 – 28, 34, 35, 135 (as to Boiler 5), and 136.

WHEREAS, notwithstanding the foregoing reservations, 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 Virgin Islands Department of Planning and Natural Resources ("VIDPNR") recognizes that, after the Date of Lodging of this Consent Decree, HOVENSA may seek to apply for a revised Permit to Operate (or Title V permit amendment) for the Coker to change, modify or delete certain provisions, in accordance with and as provided by applicable permitting regulations providing for such revisions;

WHEREAS, the Parties agree that nothing in this Consent Decree requires the aggregation of projects undertaken to implement the requirements of this Consent Decree for purposes of NSR/PSD permitting, and that such determinations shall be made in accordance with applicable EPA policy;

NOW THEREFORE, with respect to the matters set forth in the Complaint and in Part XVII (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 United States' Complaint states a claim upon which relief may be granted for injunctive relief and civil penalties against HOVENSA 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.

2. Venue is proper in the District of the Virgin Islands 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). HOVENSA consents to the personal jurisdiction of this Court, waives any objections to venue in this District, and does not object to the Virgin Islands' participation in this action.

3. Notice of the commencement of this action has been given to the Virgin Islands 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 Refinery, and shall be binding upon the United States, the United States Virgin Islands, HOVENSA and its agents, successors, and assigns.

5. HOVENSA agrees not to contest the validity of this Consent Decree in any subsequent proceeding to implement or enforce its terms. HOVENSA 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. Effective from the Date of Entry of this Consent Decree until termination pursuant to Part XIX (Termination), HOVENSA agrees that the Refinery is covered by this Consent Decree. Effective from the Date of Entry, HOVENSA shall give written notice of this Consent Decree to any successors in interest to the Refinery prior to the transfer of ownership or operation of any portion of the Refinery and shall provide a copy of this Consent Decree to any successor in interest. HOVENSA shall notify the United States and the Virgin Islands, in accordance with the notice provisions set forth in Paragraph 225 ("Notice"), of any successor in interest at least thirty (30) Days prior to any such transfer.

7. HOVENSA 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 or membership interest) in the Refinery upon the execution by the transferee of a modification to this Consent Decree, which makes the terms and conditions of this Consent Decree applicable to the transferee. By no earlier than thirty (30) Days after such notice, HOVENSA may file a motion to modify this Consent Decree with the Court to make the terms and conditions of this

Consent Decree applicable to the transferee. HOVENSA shall be released from the obligations and liabilities of this Consent Decree unless the United States or the Virgin Islands opposes the motion and the Court finds that the transferee does not have the financial and technical ability to assume the obligations and liabilities under this Consent Decree.

8. Except as provided in Paragraph 7, HOVENSA shall be solely responsible for ensuring that performance of the work contemplated under this Consent Decree is undertaken in accordance with the deadlines and requirements contained in this Consent Decree and any appendices hereto. HOVENSA 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. Copies of the relevant portions of this Consent Decree do not need to be supplied to firms who are retained solely to supply materials or equipment to satisfy the requirements of this Consent Decree.

III. OBJECTIVES

9. It is the purpose of the Parties to this Consent Decree to further the objectives of the Clean Air Act.

IV. 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 Operating Days.

B. "7-day rolling average" shall mean the average daily emission rate during the preceding seven (7) Operating Days.

C. "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.

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

E. "Acid Gas Flaring Device" or "AG Flaring Device" shall mean any device 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 Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja"). To the extent that, during the duration of the Consent Decree, the Refinery utilizes AG Flaring Devices other than those specified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja") for the purpose of combusting Acid Gas and/or Sour Water Stripper Gas, those AG Flaring Devices shall be covered under this Consent Decree.

F. "Acid Gas Flaring Incident" or "AG Flaring Incident" shall mean an incident that results in the continuous or intermittent combustion of Acid Gas and/or Sour Water Stripper Gas in one or more AG Flaring Devices that results in the emission of sulfur dioxide equal to, or in excess of, 500 pounds in any 24-hour period; provided, however, that if 500 pounds or more of sulfur dioxide has been emitted in a 24-hour period and flaring continues into subsequent, contiguous, non-overlapping 24-hour period(s), each period of which results in emissions equal to, or in excess of, 500 pounds of sulfur dioxide, then only one AG Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of flaring within the AG Flaring Incident. 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 one AG Flaring Incident unless the root causes of the flaring at the various AG Flaring Devices are not related to each other.

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

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

I. "CO" shall mean carbon monoxide.

J. "Coker" shall mean the delayed coker unit commissioned on or about August 2002.

K. "Coker Steam Vents" shall mean the valves and associated pipe located on the coke drums that are used to vent exhaust gases from the coke drum to the atmosphere following water quench. This shall not include emergency pressure relief safety valves.

L. "Compressor Engines" shall mean the fuel-fired reciprocating engines that are coupled to the Nos. 2 and 4 desulfurizer unit compressors.

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

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

O. "Current Generation Ultra-Low NO_x Burners" or "Current Generation ULNBs" shall mean those burners that are designed to achieve a NO_x emission rate of 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).

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P. "Date of Entry" shall mean the date on which this Consent Decree is approved and signed by a District Court Judge for the District of the Virgin Islands.

Q. "Date of Lodging" shall mean the date this Consent Decree is lodged with the District Court of the Virgin Islands.

R. "Day" or "Days" shall mean a calendar day or days unless expressly stated to be a Working Day or Working 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 Virgin Islands territorial holiday, the period shall run until the close of business of the next Working Day.

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

T. "FCCU" shall include the riser, reactor, regenerator, air blower, spent catalyst stripper, catalyst recovery equipment, regenerator equipment for controlling air pollutant emissions, flue gas cooler, and the fractionator, its overhead condenser and associated wet gas compressor.

U. "FCCU and Coker Drain Systems" means the individual drain systems (as defined in 40 CFR §60.691) and ancillary equipment which manage oily wastewater generated in the process units in the FCCU complex and the Coker.

V. "FCCU Catalyst Regenerator" shall mean a fluid catalytic cracking unit catalyst regenerator, as defined in 40 C.F.R. § 60.101.

W. "FCCU Turboexpander Vents" shall mean the vents used during maintenance after the turboexpander has been completely bypassed to safely depressurize the ductwork and turboexpander.

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

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

Z. "Generating Turbine" shall mean any gas or liquid fuel-fired combustion turbine of any size that is used to generate electricity or steam through the use of a heat recovery steam generator.

AA. "HOVENSA" shall mean HOVENSA L.L.C. and its respective successors and assigns.

BB. "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.

CC. "Hydrocarbon Flaring Device" or "HC Flaring Device" shall mean a flare 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 identified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja"). To the extent that, during the duration of the Consent Decree, the Refinery utilizes HC Flaring Devices other than those specified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja") for the purposes of combusting any excess volume 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.

DD. "Hydrocarbon Flaring Incident" or "HC Flaring Incident" shall mean an incident that results in the continuous or intermittent Hydrocarbon Flaring, except for Acid Gas, Sour Water Stripper Gas, or Tail Gas, at a Hydrocarbon Flaring Device that results in the emission of

sulfur dioxide equal to or greater than five-hundred (500) pounds in any 24-hour period; provided, however, that if 500 pounds or more of sulfur dioxide has been emitted in any 24-hour period and flaring continues into subsequent, contiguous, non-overlapping 24-hour period(s), each period of which results in emissions equal to, or in excess of, 500 pounds of sulfur dioxide, then only one HC Flaring Incident shall have occurred. Subsequent, contiguous, non-overlapping periods are measured from the initial commencement of flaring within the HC Flaring Incident. 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 one HC Flaring Incident unless the root causes of the flaring at the various HC Flaring Devices are not related to each other.

EE. "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."

FF. "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).

GG. "NO_x" shall mean nitrogen oxides.

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

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

JJ. "Part" shall mean a portion of this Consent Decree identified by a Roman numeral.

KK. "PEMS" shall mean predictive emissions monitoring systems developed in accordance with Appendix B ("Predictive Emissions Monitoring System Requirements") to this Consent Decree.

LL. "PM" shall mean particulate matter as measured by 40 C.F.R. Part 60, Appendix A, Method 5B or 5F (front half only).

MM. "Parties" shall mean the United States, the United States Virgin Islands, and HOVENSA L.L.C.

NN. "Refinery" shall mean the petroleum refining facility that is owned and operated by HOVENSA L.L.C. in St. Croix, U.S. Virgin Islands. The boundaries of the Refinery are shown in Appendix I ("Map of HOVENSA L.L.C."). The Refinery does not include Oxbow St. Croix L.L.C, VWNA Process Solutions/Texas L.L.C., Charlie's/Diamond Ready Mix, Inc., Spencer Ocean Services, or Linde Gas Puerto Rico, Inc., which are located within the Refinery's boundaries but are not part of the Refinery's operations as of the Date of Lodging.

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

PP. "Section" shall mean a portion of this Consent Decree identified by a capital letter.

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

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

SS. "SO_2" shall mean sulfur dioxide.

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

UU. "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.

VV. "Tail Gas" ("TG") shall mean exhaust from the Claus trains and/or the Tail Gas Unit.

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

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

a. Is combusted in a thermal incinerator and results in excess emissions of 500 pounds or more of SO_2 in any 24-hour period. Only those time periods with emissions that are in excess of an SO_2 concentration of 250 ppm (rolling twelve-hour average) shall be used to determine the amount of excess SO_2 emissions from the incinerator; or

b. Is emitted from the Tail Gas Unit and results in excess emissions of total reduced sulfur ("TRS") that are equivalent to 500 pounds or more of SO_2 emissions in any 24-hour period. Only those time periods with emissions that are in excess of a TRS concentration of 300 ppm (rolling twelve-hour average) shall be used to determine the equivalent amount of excess SO_2 emissions.

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

YY. "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.

ZZ. "VIDPNR" shall mean the Department of Planning and Natural Resources of the United States Virgin Islands.

AAA. "Wet Injection" shall mean the injection of water or steam into the combustion section of a Generating Turbine for the purposes of NO_x control.

BBB. "Working Day" or "Working Days" shall mean any calendar day or days except Saturday, Sunday, federal holidays, or Virgin Islands territorial holidays.

V. AFFIRMATIVE RELIEF/ENVIRONMENTAL PROJECTS

A. Control of NO_x Emissions from the FCCU.

Summary: HOVENSA shall implement a program as set forth herein with a goal to reduce NO_x emissions from the FCCU. HOVENSA shall incorporate lower NO_x emission limits into permit applications and will demonstrate future compliance with the lower emission limits through the use of CEMS.

11. FCCU NO_x Emission Limits. By no later than the Date of Entry, HOVENSA shall limit NO_x emissions from the FCCU to 20 ppmvd or less on a 365-day rolling average and 40 ppmvd or less on a 7-day rolling average, each at 0% O_2. NO_x emissions during periods of Startup, Shutdown or Malfunction of the FCCU shall not be used in determining compliance

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with the 7-day rolling average NO_x emission limit, provided that during such periods HOVENSA implements good air pollution control practices to minimize NO_x emissions.

12. Demonstrating Compliance with FCCU NO_x Emission Limits. By no later than the Date of Lodging, HOVENSA shall continue to use NO_x and O_2 CEMS to monitor performance of the FCCU and to report compliance with the terms and conditions of this Consent Decree. CEMS will be used to demonstrate compliance with the NO_x emission limits established pursuant to Paragraph 11. HOVENSA shall make CEMS data available to EPA and VIDPNR upon request as soon as practicable. HOVENSA shall install, certify, calibrate, maintain, and operate all CEMS required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, HOVENSA 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. HOVENSA must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

B. Control of SO_2 Emissions from the FCCU.

Summary: HOVENSA shall limit SO_2 emissions from the FCCU, as required herein. HOVENSA has incorporated the SO_2 emission limits into permits and will continue to demonstrate compliance with the emission limits through the use of CEMS.

13. FCCU SO_2 Emission Limits. By no later than the Date of Entry, HOVENSA shall limit SO_2 emissions from the FCCU to 16 ppmvd or less on a 365-day rolling average and 25 ppmvd or less on a 7-day rolling average, each at 0% O_2.

14. Demonstrating Compliance with FCCU SO_2 Emission Limits. By no later than the Date of Entry, HOVENSA shall use an SO_2 (and O_2) CEMS to monitor the performance of the FCCU and to report compliance with the terms and conditions of this Consent Decree. HOVENSA shall make CEMS data available to EPA and VIDPNR upon request, as soon as practicable. SO_2 emissions during periods of Malfunction of the Wet Gas Scrubber ("WGS") shall not be used in determining compliance with the 7-day rolling average SO_2 emission limit established pursuant to Paragraph 13, provided that during such periods HOVENSA implements good air pollution control practices to minimize SO_2 emissions. HOVENSA shall install, certify, calibrate, maintain, and operate all CEMS required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, HOVENSA 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. HOVENSA must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

C. Control of PM Emissions from the FCCU.

Summary: HOVENSA shall continue to control and limit particulate matter ("PM") emissions from the Refinery FCCU.

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15. FCCU PM Emission Limits. By no later than the Date of Entry, HOVENSA shall limit PM emissions from the FCCU to 0.5 pounds PM or less per 1,000 pounds of coke burned based on the average of three (3) 1-hour stack tests.

16. PM Testing for FCCU. HOVENSA shall follow the stack test methodology specified in 40 C.F.R. § 60.106(b)(2) to measure PM emissions from the FCCU. HOVENSA shall propose and submit a stack test protocol to EPA and VIDPNR, for approval by EPA, not later than three (3) months after the Date of Entry. HOVENSA shall conduct the first stack test no later than twelve (12) months after the Date of Entry. HOVENSA shall conduct annual stack tests at the FCCU. Upon demonstrating through at least three (3) annual tests that the PM limits are not being exceeded, HOVENSA may request EPA approval to conduct tests less frequently than annually.

17. PM emissions during periods of Malfunction of the FCCU's WGS shall not be used in determining compliance with the emission limit of 0.5 pounds of PM per 1,000 pounds of coke burned, provided that during such periods HOVENSA implements good air pollution control practices to minimize PM emissions.

D. Control of CO Emissions from the FCCU.

Summary: HOVENSA shall continue to operate the FCCU in a manner that minimizes CO emissions while complying with the NO_x limits as required herein.

18. FCCU CO Emissions Limit. By no later than the Date of Entry, HOVENSA shall limit CO emissions from the FCCU to 500 ppmvd or less on a 1-hour block average basis corrected to 0% O_2.

19. At any time during the term of this Consent Decree, HOVENSA may accept a CO emissions limit of 100 ppmvd or less on a 365-day rolling average basis corrected to 0% O_2.

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20. CO emissions during periods of Startup, Shutdown, or Malfunction of the FCCU shall not be used in determining compliance with the 1-hour 500 ppmvd emissions limit, provided that during such periods HOVENSA implements good air pollution control practices to minimize CO emissions.

21. Demonstrating Compliance with FCCU CO Emission Limits. By no later than the Date of Entry, HOVENSA shall continue to use a CO CEMS to monitor the performance of the FCCU and to report compliance with the terms and conditions of this Consent Decree. HOVENSA shall make CEMS and process data available to EPA and VIDPNR upon request, as soon as practicable. HOVENSA shall install, certify, calibrate, maintain, and operate all CEMS required by this Paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMs (excluding those provisions applicable only to Continuous Opacity Monitoring Systems) and Part 60 Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60 Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, HOVENSA must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. HOVENSA must also conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.

E. NSPS Subparts A and J Applicability to the FCCU Catalyst Regenerator.

22. The HOVENSA FCCU Catalyst Regenerator shall continue to be an "affected facility," as that term is used in 40 C.F.R. Part 60, Subparts A and J, and therefore shall be subject to and continue to comply with, the requirements of 40 C.F.R. Part 60, Subparts A and J, for SO_2, PM (and opacity), and CO. HOVENSA shall comply with the monitoring requirements of NSPS Subparts A and J for opacity by submitting, by no later than sixty (60) Days following

the first stack test required by Paragraph 16, an Alternate Monitoring Plan (AMP) for EPA approval. Compliance at the FCCU Catalyst Regenerator with the provisions of NSPS Subpart Ja shall constitute compliance with the requirements of NSPS Subpart J as provided in 40 C.F.R.§60.100 (e) for the purposes of this Section and Paragraph 219.

a. If prior to the termination of this Consent Decree, the FCCU becomes subject to NSPS Subpart Ja for a particular pollutant due to a modification, the 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, the FCCU becomes subject to NSPS Subpart Ja due to a reconstruction, the affected facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.

F. NO_x Emission Reductions from Heaters, Boilers, Generating Turbines, and Compressor Engines.

Summary: As required herein, HOVENSA shall implement a program to reduce NO_x emissions from Refinery heaters and boilers with a heat input of greater than 40 mmBTU/hr, Generating Turbines and Compressor Engines. NO_x emission reductions will be accomplished through the designated installation of NO_x controls and the acceptance of permit emission limits on the units controlled to meet the requirements of Paragraph 24 or the shutdown of certain units and the relinquishment of their permits. HOVENSA will monitor compliance with the emission limits through source testing, use of CEMS, and/or the use of a PEMS. CEMS required under this Section shall be operated and data recorded pursuant to applicable law.

23. Installation of NO_x Control Technology. HOVENSA shall select one or any combination of the following "Qualifying Controls" to satisfy the requirements of Paragraphs 24, 26, 27, and 28:

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

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

c. Wet injection applied to Generating Turbines to achieve 96 ppmvd @ 15% O_2 when firing vacuum gas oil (VGO) and 42 ppmvd @ 15% O_2 when firing any other fuels;

d. Other technologies which HOVENSA demonstrates to EPA's satisfaction should reduce NO_x emissions to 0.040 lb per million BTU or less when firing refinery fuel gas in heaters and boilers, to 0.150 lb per million BTU when firing Fuel Oil in heaters and boilers; and

e. Permanent unit shutdown and relinquishment of permit.

24. HOVENSA shall use Qualifying Controls to reduce NO_x emissions from the heaters and boilers greater than 40 mmBTU per hour, Generating Turbines, and Compressor Engines listed in Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines"), by the amounts and deadlines required in Paragraphs 26, 27 and 28 expressed as tons per year, and as determined by the total of the summations below:

$$\sum_{i=1}^{n}\left[\left(E_{actual}\right)_i - \left(E_{allowable}\right)_i\right]$$

Where:

for gas only fired combustion units

$(E_{allowable})_i$ = [(The permitted allowable pounds of NO_x per million BTU for combustion unit i, or the requested portion of the permitted reduction pursuant to Paragraph 131.e)/(2000 pounds per ton)] x [(the lower of permitted or maximum heat input rate capacity in million BTU per hour for combustion unit i) x (the lower of 8760 or permitted hours per year)];

for oil capable combustion units

$$(E_{allowable})_i = [(PAF1)x(AAHIF1) + (PAF2)x(PMAAHI - AAHIF1)]x(8760/2000)$$

PAF1	=	permitted allowable lb NO_x/mmBTU for higher emitting fuel #1 (e. g. VGO)
AAHIF1	=	permitted annual average allowable heat input mmBTU/hr fuel #1 (e.g., VGO)
PAF2	=	permitted allowable lb/mmBTU for lower emitting fuel #2 (e. g., refinery fuel gas and No. 2 oil)
PMAAHI	=	permitted maximum annual average allowable heat input mmBTU/hr for all fuels or reduced value if annual utilization is limited by permit
$(E_{actual})_i$	=	The average tons of NO_x per year prior actual emissions during calendar years 2004 and 2005 (unless prior actuals exceed allowable emissions, then use allowable) as shown in Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines") for controlled heater or boiler i; and
n	=	The number of combustion units with Qualifying Controls at the Refinery from those listed in Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines") that are selected by HOVENSA to satisfy the requirements of the equation set forth in this Paragraph.

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

25. Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines") provides the following information for each of the heaters and boilers with a maximum heat input capacity greater than 40 mmBTU per hour, all Generating Turbines and Compressor Engines:

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

b. The actual NO_x emission rate for both calendar years 2004 and 2005 in lb/mmBTU (HHV) and tons per year; and

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

26. By four (4) years from Date of Entry, HOVENSA shall install sufficient Qualifying Controls and have applied for emission limits from the appropriate permitting authority sufficient to achieve 1,079 tpy NO_x emissions reductions as determined by the summation in Paragraph 24. By four (4) years and three (3) months from Date of Entry, HOVENSA shall provide EPA with a report showing how it satisfied the requirement of this Paragraph and Paragraph 23. For purposes of this Consent Decree, "applied for" shall mean that HOVENSA has submitted a complete and timely application for the appropriate permit, permit modification, and/or other enforceable permit vehicle.

27. By five (5) years from Date of Entry, HOVENSA shall install sufficient Qualifying Controls and have applied for emission limits from the appropriate permitting authority sufficient to achieve 3,663 tpy NO_x emission reductions as determined by the summation in Paragraph 24. By five (5) years and three (3) months from Date of Entry, HOVENSA shall provide EPA with a report showing how it satisfied the requirement of this Paragraph and Paragraph 23.

28. By eight (8) years from Date of Entry, HOVENSA shall install sufficient Qualifying Controls and have applied for emission limits from the appropriate permitting authority sufficient to achieve 4,744 tpy NO_x emission reductions as determined by the summation in Paragraph 24. By eight (8) years and three (3) months from Date of Entry,

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HOVENSA shall provide EPA with a report showing how it satisfied the requirement of this Paragraph and Paragraph 23.

29. HOVENSA shall submit a detailed NO_x Control Plan ("Control Plan") to EPA for review and comment, and to VIDPNR, by no later than four (4) months after Date of Entry, with annual updates every twelve (12) months thereafter until HOVENSA has complied with the requirements of Paragraph 28. The Control Plan and its updates shall describe the achieved and anticipated progress of the NO_x emission reductions program for heaters, boilers, Generating Turbines, and Compressor Engines and shall contain the following for each heater and boiler greater than 40 mmBTU/hr, all Generating Turbines, and Compressor Engines that HOVENSA plans to use to satisfy the requirements of Paragraphs 26, 27 or 28:

a. All of the information in Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines");

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;

d. The results of emissions tests conducted pursuant to Paragraph 30 and annual average CEMS or PEMS data (in ppmvd at 3% O_2, lbs/mmBTU), and tons per year; and

e. The amount in tons per year applied or to be applied toward satisfying Paragraphs 24, 26, 27, and 28.

Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines") and the Control Plan and updates required by

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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. HOVENSA may change any projections, plans, or information included in the Control Plan or updates.

30. Beginning no later than 180 Days after installing Qualifying Controls on and commencing operation of a heater, boiler, or Generating Turbine that will be used to satisfy the requirements of Paragraphs 24, 26, 27, and 28, HOVENSA shall monitor the heaters, boilers or Generating Turbines as follows:

a. For heaters, boilers, and Generating Turbines 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), or Generating Turbines, install or continue to operate a NO_x CEMS, or monitor NO_x emissions with a PEMS developed and operated pursuant to the requirements of Appendix B ("Predictive Emissions Monitoring System Requirements");

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 or VIDPNR under other applicable regulatory authority. The results of the initial performance testing shall be reported to EPA and VIDPNR.

HOVENSA shall use Method 7E, an EPA-approved, or a VIDPNR-approved alternate test method to conduct initial performance testing for NO_x emissions required by this Subparagraph. Monitoring with a PEMS that is required by this Paragraph shall be conducted in accordance with the requirements of Appendix B ("Predictive Emissions Monitoring System

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Requirements"). Units with Qualifying Controls installed before Date of Entry that are subject to this Paragraph shall comply with this Paragraph by three (3) years from Date of Entry.

31. Beginning no later than 180 Days after installing Qualifying Controls and commencing operation of a heater, boiler or Generating Turbine that will be monitored by use of a NO_x CEMS that is required by Paragraph 30, HOVENSA 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 §§ 5.1.1, 5.1.3 and 5.1.4, HOVENSA must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. HOVENSA 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 territorial or local monitoring requirements.

32. The requirements of this Section do not exempt HOVENSA from complying with any and all Federal or territorial 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.

33. HOVENSA shall retain all records required to support the reporting requirements under this Section until termination of the Consent Decree. HOVENSA shall submit such records to EPA or VIDPNR upon request.

G. SO_2 Emissions Reductions from, and NSPS Applicability to, Heaters, Boilers and Generating Turbines.

Summary: HOVENSA shall undertake measures to reduce SO_2 emissions from Refinery heaters, boilers and Generating Turbines by restricting H_2S in refinery fuel gas that is combusted as specifically limited under the provisions set forth herein.

34. NSPS Applicability to Heaters, Boilers, and Other Fuel Gas Combustion Devices (Other than Flaring Devices). All heaters, boilers, and all other fuel gas combustion devices (other than Flaring Devices) shall be affected facilities, as that term is used in 40 C.F.R. Part 60, Subparts A and J (or Ja if Subparagraph a or b of this paragraph applies for a particular affected facility), and shall be subject to and comply with the applicable requirements of NSPS Subparts A and J (or Ja if Subparagraph a or b of this paragraph applies for a particular affected facility), for fuel gas combustion devices by the Date of Lodging, except for those heaters, boilers, and other fuel gas combustion devices listed in Appendix C ("NSPS Subpart J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)"), which shall comply with the dates specified in Appendix C. Compliance of a fuel gas combustion device with the provisions of NSPS Subpart Ja for SO_2 emissions shall constitute compliance with the requirements of NSPS Subpart J as provided in 40 C.F.R. §60.100(e) for the purposes of this Section.

a. If prior to the termination of this Consent Decree, any heater, boiler or other fuel gas combustion device (other than a Flaring Device) becomes subject to NSPS Subpart Ja for a particular pollutant due to a modification, the 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 (other than a Flaring Device) becomes subject to NSPS Subpart Ja due to a reconstruction, the affected facility shall be subject to and comply with NSPS Subpart Ja for all pollutants in lieu of Subpart J.

35. By no later than the date compliance is required pursuant to Paragraph 34, HOVENSA shall comply with the H_2S/SO_2 monitoring requirements of NSPS Subparts A and J or Ja, as applicable. HOVENSA shall make monitoring data available to EPA and VIDPNR upon request as soon as practicable. HOVENSA 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.

36. 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 or Ja, as applicable, pursuant to this Section, 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).

H. Sulfur in Fuel Restrictions for Oil Burning.

Summary: HOVENSA shall reduce SO_2 emissions by reducing the sulfur content of Fuel Oil combusted pursuant to the provisions set forth herein.

37. Effective thirty (30) Days after the Date of Lodging, HOVENSA shall not burn Fuel Oil greater than 0.55 wt % sulfur at any time or 0.50 wt% on a 365-day rolling average basis in any heater, boiler, or Generating Turbine.

38. HOVENSA shall switch the fuel supply for any units combusting Fuel Oil to a Fuel Oil with not greater than 0.3 wt % sulfur within one hour of when one of the following conditions occurs:

a. The hourly average winds blow from a 180° sector, defined as 90° to 270°, inclusive, where zero degrees is due North, for at least six (6) consecutive hours during a 24-hour block period, or any 12 non-consecutive hours during a 24-hour block period. Wind direction will be monitored by a meteorological tower located on HOVENSA property, and will be collected and reported as 1-hour averages, starting on the hour. If the average wind direction for a given hour is from within the 180° sector, the wind will be deemed to have flowed from within the designated sector for that hour. A 24-hour block period is defined as beginning at midnight and ending on the following midnight.

b. HOVENSA's meteorological station is inoperable for six consecutive hours.

39. HOVENSA may switch back to the higher sulfur content Fuel Oil (a Fuel Oil with a sulfur content of less than or equal to 0.55 wt%) in accordance with the following conditions:

a. The winds blow outside of the 180° sector, defined as 90° to 270°, for at least three (3) consecutive hours, following the period which the winds were blowing inside the 180° sector; or

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b. When the meteorological station becomes operable, and three (3) consecutive hours of wind conditions outside the 90° to 270° sector have occurred.

40. On a daily basis, HOVENSA shall monitor the sulfur content of all Fuel Oil burned pursuant to Paragraph 39 in accordance with ASTM D2622, D4294, or D5453, as follows:

a. Fuel Oil Supplied from Single Storage Tank:

i. If the Fuel Oil burned is supplied from a single storage tank for an entire day or part thereof, then HOVENSA shall test the contents of the storage tank once per day by a sample taken at three (3) levels in the storage tank (i.e., the bottom, middle, and top) which is then composited (Composite Sample).

ii. If the same storage tank is used for more than one day and no Fuel Oil is added to the storage tank, then HOVENSA may use the storage tank sample result from the previous day to demonstrate the sulfur content of the storage tank.

b. Fuel Oil Supplied from Multiple Storage Tanks: If the Fuel Oil burned for one or more consecutive days is supplied from more than one storage tank, then HOVENSA shall sample each storage tank separately once per day by a Composite Sample taken at three (3) levels in the storage tank (i.e., the bottom, middle, and top).

c. In the event that Fuel Oil is added to any storage tank, HOVENSA shall sample the storage tank by a Composite Sample taken at three (3) levels in the storage tank (i.e., the bottom, middle, and top) before the storage tank is placed into service.

HOVENSA shall record the quantity and sulfur content of all Fuel Oil burned pursuant to Paragraph 39, and shall include this data with the periodic (semi-annual) progress reporting in accordance with Part X (Reporting and Recordkeeping).

I. **Sulfur Recovery Plants:** The SRPs are or will be affected facilities under NSPS Subparts J or Ja, and are complying or will comply with all applicable requirements of 40 C.F.R. Part 60, Subparts A and J or Ja.

41. Description of Sulfur Recovery Plants. As of Date of Entry, HOVENSA owns and operates the following SRPs:

a. East Side Sulfur Recovery Plant: The East Side SRP consists of two Claus Trains, #3 SRU and #4 SRU. A single Beavon Stretford Tail Gas Unit ("Beavon #2") serves as the control device for both Claus Trains. During maintenance, Startup, Shutdown, and Malfunction of Beavon #2, TG is combusted in an incinerator (H-4745).

b. West Side Sulfur Recovery Plant: The West Side SRP consists of two Claus Trains, #1 SRU and #2 SRU. A single Beavon Stretford Tail Gas Unit ("Beavon #1") serves as the control device for both Claus Trains. During Startup, Shutdown, and Malfunction of Beavon #1, TG from SRUs #1 and #2 is combusted in separate dedicated incinerators (H-1032 and H-1042).

42. NSPS Applicability for SRPs. Effective on April 1, 2015, the East Side SRP shall be an "affected facility" as that term is used in 40 C.F.R. Part 60, Subparts A and Ja and shall become subject to the requirements of Subpart Ja. The West Side SRP is currently an "affected facility" as that term is used in 40 C.F.R. Part 60, Subparts A and J and is already subject to the requirements of Subpart J and shall be subject to Subpart Ja by no later than December 31, 2011.

43. Sulfur Pit Emissions: HOVENSA shall route or re-route all sulfur pit emissions so that they are eliminated or controlled, and included and monitored as part of the SRPs' emissions subject to the NSPS Subpart Ja limit for SO_2 or reduced sulfur compounds, 40 C.F.R.

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§ 60.102a(f), by no later than December 31, 2014 at the East Side SRP and December 31, 2011 at the West Side SRP.

44. Compliance with NSPS at the West Side SRP.

a. As of the Date of Entry, the West Side SRP shall continue to comply with the applicable provisions of NSPS Subparts A and J except for SO_2 CEMS on the West Side incinerators, which shall be installed by December 31, 2010. As of December 31, 2011, the West Side SRP shall comply with NSPS Subpart Ja. The West Side SRP shall continue to comply with 40 C.F.R. § 60.104(a)(2) or 40 C.F.R. § 60.102a(f), as applicable, at all times except during periods of Startup, Shutdown, or Malfunction of the West Side SRP 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) or 40 C.F.R. § 60.102a(f), as applicable, the "start-up/shutdown" provisions set forth in NSPS Subpart A shall apply.

b. At all times, including periods of Startup, Shutdown, and Malfunction, HOVENSA shall, to the extent practicable, operate and maintain the West Side 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. HOVENSA shall monitor all non-fugitive emission points (stacks) to the atmosphere from the West Side 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 or 7) or 60.106a, as applicable. HOVENSA shall conduct emission monitoring with CEMS at all such emission points. The requirement for continuous monitoring is not applicable to:

i. The Acid Gas Flaring Device(s) used to flare Acid Gas and/or Sour Water Stripper Gas diverted from the SRPs,

ii. The sulfur pit emissions prior to December 31, 2011.

45. Compliance with NSPS Emissions Limits at the East Side SRP.

a. By no later than December 31, 2014, HOVENSA shall install at the East Side SRP a second TGU to control the emissions of sulfur compounds from the East Side SRP. By no later than December 31, 2011, HOVENSA shall submit to EPA and VIDPNR a compliance plan and schedule for the completion of installation of the second East Side TGU. By April 1, 2015, HOVENSA shall demonstrate compliance with NSPS Subparts A and Ja SRP requirements at the East Side SRP.

b. HOVENSA shall also implement the following interim performance standards at the East Side SRP:

i. HOVENSA shall continue to maintain and operate a TRS/H_2S CEMS for monitoring the emissions from Beavon #2 in accordance with 40 C.F.R. Part 63, Subpart UUU, Table 40 and shall comply during the interim period with the specific monitoring and reporting provisions established in Subparagraph 45.b.iii.

ii. By no later than 180 Days after Date of Entry, HOVENSA shall complete an optimization study the objective of which is to minimize emissions of sulfur compounds and to maximize sulfur recovery efficiencies at the East Side SRP and shall submit a copy of that study to EPA. This study shall meet all of the requirements set forth in Paragraph 46. HOVENSA shall implement the recommendations of the study that could reasonably optimize the performance of the East Side SRP in accordance with the schedule proposed by HOVENSA.

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iii. By no later than twelve (12) months from Date of Entry, HOVENSA shall submit a report to EPA that proposes either a pounds of SO_2 per hour emission limit or a percent sulfur recovery standard as an interim performance standard when the TGU is being bypassed, appropriate monitoring and reporting requirements for the proposed interim performance standards and, if necessary, a schedule for implementing additional optimization study recommendations that would ensure that the East Side SRP complies with HOVENSA's proposed interim performance standard. Beginning with the date of such submission, HOVENSA shall comply with its proposed interim performance standard and, if necessary, implement its proposed schedule for additional optimization study recommendations.

iv. If EPA determines, based on the results of the study and other available and relevant information, that more stringent interim performance standards and/or a different implementation schedule is appropriate and can be achieved with a reasonable certainty of compliance, EPA shall so notify HOVENSA. Unless HOVENSA disputes EPA's determination(s) within ninety (90) Days of its receipt of that notice, it shall comply with such new standards within ninety (90) Days or, if necessary, such other period as may be established by EPA consistent with any implementation schedule for additional optimization study recommendations proposed by HOVENSA. HOVENSA shall continue to comply with the interim performance standard until such time as HOVENSA completes installation of the new TGU in accordance with the schedule under

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Paragraph 45.a and operates the East Side SRP in compliance with NSPS Subpart Ja.

v. During the period of time the interim performance standard in Subparagraph 45.b.iii or 45.b.iv are in effect, when Beavon #2 is not operating and Tail Gas is being vented to an incinerator, HOVENSA shall limit SO_2 emissions from the East Side SRP to a total of 30 tons per day. When Beavon #2 is not operating, Tail Gas shall not be vented to the East Side SRP incinerator for more than thirty (30) days (720 hours) per calendar year, with a maximum of 14 continuous days.

c. The interim performance standards established under this Paragraph terminate upon the date of Subpart Ja applicability for the East Side SRP.

46. Optimization:

a. The optimization study required for the East Side SRP Claus trains shall meet the following requirements:

i. Detailed evaluation of plant design and capacity, operating parameters and efficiencies – including catalytic activity and material balances;

ii. An analysis of the composition of the Acid Gas and Sour Water Stripper Gas resulting from the processing of crude slate actually used, or the composition for a crude slate expected to be used;

iii. A thorough review of each critical piece of process equipment and instrumentation within the Claus train that is designed to correct deficiencies or problems that prevent the Claus train from achieving its optimal sulfur recovery efficiency and expanded periods of operation;

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

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

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

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

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

ix. The study shall be conducted to optimize the performance of the Claus trains in light of the actual characteristics of the feeds to the East Side SRP.

b. HOVENSA shall incorporate the results of its optimization study into the PMO Plan required under Paragraph 48.

47. For the East Side SRP, which becomes an affected facility under NSPS Subpart Ja pursuant to Section V.I, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree shall satisfy the notice requirements of 40 C.F.R. § 60.7(a) and the initial performance test requirement of 40 C.F.R. § 60.8(a).

48. Good Operation and Maintenance.

a. By no later than six (6) months after the Date of Entry, HOVENSA shall submit to EPA and VIDPNR, a summary of the Refinery's plan for enhanced maintenance and

operation of the East Side SRP and the West Side SRP, the sulfuric acid plant, any supplemental control devices, and the appropriate Upstream Process Units, that has been or will be implemented. This plan shall be termed a Preventative Maintenance Operation Plan ("PMO Plan"). The PMO Plan shall be a compilation of HOVENSA's approaches for exercising good air pollution control practices and for minimizing TRS and SO_2 emissions. The PMO Plan will identify actions to promote the continuous operation of its SRPs between scheduled maintenance turnarounds with minimization of emissions, including the continued use of supplemental control devices, if any. The PMO Plan shall include, but not be limited to, sulfur shedding procedures, Startup and Shutdown procedures, hot standby procedures, emergency procedures, and schedules to coordinate maintenance turnarounds of the SRP Claus trains and any supplemental control device, if any, to coincide to the extent practicable with scheduled turnarounds of major Upstream Process Units. The PMO Plan shall have as a goal the elimination of Acid Gas Flaring. HOVENSA shall comply with the PMO Plan at all times, including periods of Startup, Shutdown and Malfunction of its SRPs. HOVENSA's changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO_2 emissions shall be summarized and reported to EPA and VIDPNR on an annual basis. This report may be included in the appropriate semi-annual report required under Paragraph 71.

b. EPA and VIDPNR do not, by their review of a PMO Plan and/or by their failure to comment on a PMO Plan, warrant or aver in any manner that any of the actions that HOVENSA may take pursuant to such PMO Plan will result in compliance with the provisions of the Clean Air Act or any another applicable federal, territorial, or local law or regulation. Notwithstanding EPA's or VIDPNR's review of a PMO Plan, HOVENSA shall remain solely responsible for compliance with the Clean Air Act and such other laws and regulations.

J. **Flaring Devices – NSPS Applicability.**

Summary: All Flaring Devices are identified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja"). These Flaring Devices are or will be affected facilities (as that term is used in 40 C.F.R. Part 60, Subparts J/Ja) by the dates listed in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja"). As required herein, 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/Ja; 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.

49. All Flaring Devices listed in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja") are affected facilities under NSPS Subparts J/Ja. By the dates listed in Appendix D, all Flaring Devices listed in Appendix D shall comply with the requirements of NSPS Subpart Ja that apply to flares that are constructed, modified, or reconstructed after the effective dates of May 14, 2007 and June 24, 2008.

50. For Flaring Devices 2, 3, 5, 6, 7 and the FCCU Low Pressure Flaring Device, HOVENSA will design, install, operate and maintain flare gas recovery system(s) to control all continuous and intermittent, routinely-generated refinery fuel gases (not including pilot, sweep, or molecular seal gases necessary to ensure safe operation of the Flaring Devices) that are combusted in the Flaring Device(s).

51. Monitoring. By no later than three (3) years from Date of Entry, HOVENSA shall comply with the applicable monitoring requirements of NSPS Subpart Ja for all Flaring Devices listed in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja").

52. Compliance Certification for Flaring Devices. For each Flaring Device, HOVENSA will submit to EPA a compliance certification by thirty (30) Days following the dates listed in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja") that the Flaring Devices comply with the emission standards and monitoring requirements of Subparts J/Ja, and specify the compliance method for each Flaring Device.

53. Good Air Pollution Control Practices. On and after the Date of Entry, HOVENSA 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 from the Flaring Devices identified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja ") consistent with 40 C.F.R. § 60.11(d).

54. Refinery Fuel Gases

a. Continuous or Intermittent, Routinely-Generated Refinery Fuel Gases. For continuous or intermittent, routinely-generated refinery fuel gases that are combusted in any Flaring Device identified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja"), HOVENSA shall comply with 40 C.F.R. § 60.102a(g)(1) by the dates listed in Appendix D.

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 process upset or relief valve leakage or other emergency malfunction are exempt from the requirement to comply with 40 C.F.R. § 60.102a(g)(1).

55. Compliance with Consent Decree Constitutes Compliance with Certain NSPS Subpart A Requirements. For Flaring Devices subject to NSPS Subparts J/Ja (identified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja")) entry of this Consent

Decree and compliance with the relevant monitoring requirements of this Consent Decree for Flaring Devices 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).

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

57. Safe Operation of Refining Processes. The Parties recognize that under certain conditions, a flare gas recovery system may need to be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes. Nothing in this Consent Decree precludes HOVENSA from temporarily bypassing a flare gas recovery system under such circumstances, provided that the measures to ensure safe operation are fully documented in the semi-annual report required pursuant to Part X (Reporting and Recordkeeping).

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

Summary: HOVENSA agrees to implement a program as set forth herein to investigate the cause of future Acid Gas Flaring Incidents, to take reasonable steps to correct the conditions that have caused or contributed to such Acid Gas Flaring Incidents, and to minimize the flaring of Acid Gas and Sour Water Stripper Gases. HOVENSA shall follow the procedures in this Section to evaluate Acid Gas/Sour Water Stripper Gas Flaring Incidents and Tail Gas Incidents occurring after the Date of Entry and whether they are due to Malfunctions or whether they are subject to stipulated penalties. The investigative and evaluative procedures in this Section will be used to assess Tail Gas Incidents, as described in Paragraph 70, and whether they are due to

Malfunctions or whether they are subject to stipulated penalties. The procedures set forth in this Section require root cause analysis and corrective action for Acid Gas/Sour Water Stripper Gas Flaring Incidents and/or Tail Gas Incidents.

58. Flaring History and Corrective Measures. HOVENSA has conducted a look-back analysis of Acid Gas Flaring Incidents and Tail Gas Incidents that occurred from 1999 through 2005, and has submitted a report on such incidents to EPA. By Date of Entry, HOVENSA shall submit a corrective action report identifying such interim and/or long-term corrective actions, and schedule for implementation, to minimize the likelihood of a recurrence of the Root Cause of a flaring event identified in the look-back analysis.

59. Acid Gas Flaring and Tail Gas Incidents. After the Date of Entry, HOVENSA shall investigate the cause of Acid Gas Flaring Incidents and Tail Gas Incidents under Paragraph 60 and take corrective action as set forth in Paragraph 61. HOVENSA shall continue to follow the investigation and corrective action procedure after termination of the Consent Decree or such other investigation and corrective action procedure that complies with Subpart Ja or 40 C.F.R. §60.11(d), but the reporting and stipulated penalty provisions of this Section shall not apply after termination.

60. Investigation and Recordkeeping. No later than forty-five (45) Days following the end of an Acid Gas Flaring Incident occurring after the Date of Entry, HOVENSA shall conduct an investigation into the Root Cause(s) of the incident and record the findings of the investigations, in a report. The report for each incident shall include, at a minimum, the following:

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

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

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

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

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

e. An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. The analysis shall discuss all reasonable alternatives, if any, that are available, the probable effectiveness and cost of the alternatives, and whether an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. If HOVENSA concludes that corrective action(s) is (are) required under Paragraph 61, then the report of the Acid Gas Flaring Incident in the semi-annual report required by Paragraph 71 shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If HOVENSA concludes that corrective action is not required under Paragraph 61, the report shall explain the basis for that conclusion in that semi-annual report;

f. A statement that:

i. Specifically identifies each of the grounds for stipulated penalties in Paragraphs 63, 64, and 65 and describes whether the Acid Gas Flaring Incident

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falls under any of those grounds, provided, however, that HOVENSA may choose to submit with the Root Cause analysis a payment of stipulated penalties in the nature of settlement 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 whatsoever about the nature, existence or strength of HOVENSA's potential defenses;

ii. If an Acid Gas Flaring Incident falls under Paragraph 65, describes which Subparagraph 65.a or 65.b applies and why; and

iii. If an Acid Gas Flaring Incident falls under either Paragraph 64 or 65.b, states whether or not HOVENSA asserts a defense to the Acid Gas Flaring Incident, and if so, a description of the defense;

g. To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report required by this Paragraph, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Subparagraphs 60.d and 60.e shall be completed; provided, however, if HOVENSA has not completed its report or a series of reports containing the information required under this Paragraph within the forty-five (45) Day time period (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of Section V.M shall apply, but HOVENSA shall retain the right to dispute, under the dispute resolution provisions of Part XVI (Retention of Jurisdiction/Dispute Resolution), any demand for stipulated penalties that was issued as a result of HOVENSA's failure to complete the report required under this Paragraph within the time frame set forth. Nothing in this Paragraph shall be deemed to excuse HOVENSA from its investigation, reporting, and corrective

action obligations under this Section for any Acid Gas Flaring Incident which occurs after an Acid Gas Flaring Incident for which HOVENSA has requested an extension of time under this Subparagraph; and

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

61. Corrective Action.

a. In response to any Acid Gas Flaring Incident occurring after the Date of Entry, HOVENSA shall take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all significant contributing causes of that Acid Gas 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 HOVENSA may take in the future, warrant or aver in any manner that any of HOVENSA'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, HOVENSA shall remain solely responsible for non-compliance with the Clean Air Act and its implementing regulations. Nothing in this Paragraph shall be construed as a waiver of

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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 60 and submitted as required by Paragraph 71, EPA shall notify HOVENSA 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 and explain the basis for EPA's objections. HOVENSA will implement an alternative or revised corrective action or implementation schedule based on EPA's comments. If a corrective action that EPA has identified as deficient has already commenced or is already completed, then HOVENSA is not obligated to implement corrective action identified by EPA for that Acid Gas Flaring Incident provided that HOVENSA completes the corrective action that it has identified and commenced. For purposes of this Subparagraph, "commenced" means HOVENSA has (i) commenced actual physical construction on the corrective action, or (ii) completed the engineering design for the corrective action and has purchased or entered into a binding contractual obligation (with adverse consequences from its breach) to purchase equipment necessary to implement the corrective action. However, HOVENSA will be put on notice that such corrective action is deficient and not acceptable for remedying any subsequent, similar Root Cause(s) of any Acid Gas Flaring Incident. If EPA and HOVENSA cannot agree on the appropriate corrective action(s) or implementation schedule(s), if any, to be taken in response to a Root Cause, either party may invoke the Dispute Resolution provisions of Part XVI (Retention of Jurisdiction/Dispute Resolution).

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

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

62. Stipulated Penalties for Acid Gas Flaring Incidents. The provisions of Paragraphs 63 through 66 are to be used by EPA in assessing stipulated penalties for each Acid Gas Flaring Incident occurring after the Date of Entry and by the United States in demanding stipulated penalties under this Section. The provisions of Paragraphs 63 through 66 do not apply to Hydrocarbon Flaring Incidents.

63. The stipulated penalty provisions of this Paragraph through Paragraph 66 shall apply to each Acid Gas Flaring Incident for which the Root Cause was one or more or the following acts, omissions, or events:

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

b. Failure to follow written procedures; or

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

d. For Root Causes previously identified pursuant to Paragraph 58 that EPA agrees caused Malfunctions, unless the Acid Gas Flaring Incident had as its Root Cause the recurrence of a Root Cause for which HOVENSA had previously developed, or was in the process of developing, a corrective action plan and for which HOVENSA had not yet completed implementation.

64. If the Acid Gas Flaring Incident is not a result of one of the Root Causes identified in Paragraph 63, then the stipulated penalty provisions of Paragraph 73 shall apply if the Acid Gas Flaring Incident:

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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 HOVENSA failed to act in accordance with its PMO Plan and/or to take any action during the Acid Gas Flaring Incident to limit the duration and/or quantity of SO_2 emissions associated with such incident; or

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

65. With respect to any Acid Gas Flaring Incident not falling under the provisions of either Paragraph 63 or 64, the following provisions shall apply:

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

i. If the Root Cause of the Acid Gas Flaring Incident was sudden, infrequent, and not reasonably preventable through the exercise of good engineering practice, then that cause shall be designated as an agreed-upon Malfunction for purposes of reviewing subsequent Acid Gas Flaring Incidents and the stipulated penalty provisions of Paragraph 73 shall not apply.

ii. If the Root Cause of the Acid Gas Flaring Incident was sudden and infrequent, and was reasonably preventable through the exercise of good engineering practice, then HOVENSA shall implement corrective action(s) pursuant to Paragraph 61, and the stipulated penalty provisions of Paragraph 73 shall not apply.

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b. Recurrence: If the Root Cause is a recurrence of the same Root Cause that resulted in a previous Acid Gas Flaring Incident that occurred since the Date of Entry, then HOVENSA shall be liable for stipulated penalties under Paragraph 73 unless:

i. The AG Flaring Incident resulted from a Malfunction; or

ii. The Root Cause previously was designated as an agreed-upon Malfunction under Subparagraph 65.a.i; or

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

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

a. *Force Majeure*

b. Malfunction

67. In the event a dispute under Paragraphs 62 through 66 is brought to the Court pursuant to the dispute resolution provisions of Part XVI (Retention of Jurisdiction/Dispute Resolution), HOVENSA may also assert a Startup, Shutdown, and/or Malfunction defense (including for an individual SRP), but the United States shall be entitled to assert that such defenses are not available. If HOVENSA prevails in persuading the Court that the defenses of Startup, Shutdown, and/or Malfunction are available for Acid Gas Flaring Incidents under 40 C.F.R. § 60.104(a)(1), then HOVENSA shall not be liable for stipulated penalties for emissions resulting from such Startup, Shutdown, and/or Malfunction. If the United States

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prevails in persuading the Court that the defenses of Startup, Shutdown, and/or Malfunction are not available or applicable, then HOVENSA shall be liable for such stipulated penalties.

68. Other than for a Malfunction or Force Majeure, if no Acid Gas Flaring Incident occurs for a rolling 36-month period, then the stipulated penalty provisions of Paragraph 73 shall no longer apply. EPA may elect to reinstate the stipulated penalty provision if the Refinery has an Acid Gas 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 thereafter apply to future Acid Gas Flaring Incidents and continue for the remaining life of this Consent Decree.

69. 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 an AG Flaring Incident shall be calculated by the following formula:

Tons of SO_2 = [FR][TD][ConcH_2S][8.44 x 105].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons.) 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 emitted 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

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Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

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

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

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

ER	=	Emission Rate in pounds of SO_2 per hour
FR	=	Average Flow Rate to AG Flaring Device(s) during AG Flaring Incident in standard cubic feet per hour
TD	=	Total Duration of AG Flaring Incident in hours
$Conc H_2S$	=	Average Concentration of Hydrogen Sulfide in gas during AG Flaring Incident (or immediately prior to AG 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 ("$Conc H_2S$") 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 Draeger type tube analysis, or by any other method approved by EPA or the VIDPNR. In the event that any of

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these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment. The report required to be prepared under this Paragraph shall include the data used in the calculation and an explanation of the basis for any estimates of missing data points.

70. Tail Gas Incidents.

a. Investigation, Reporting, Corrective Action, and Stipulated Penalties. For Tail Gas Incidents, HOVENSA shall follow the same investigative, reporting, corrective action, and assessment of stipulated penalty procedures as those set forth in Paragraphs 60 through 68 for Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a TGU, or other events which result in a Tail Gas Incident, including scheduled and unscheduled Shutdowns of a Claus Sulfur Recovery Plant. Until the date for installation of a second TGU for the East SRP, this Paragraph shall not apply to Tail Gas Incidents involving combustion of Tail Gas during periods of planned routine maintenance on Beavon #2, including Startup and Shutdown of Beavon #2 for such routine maintenance, provided that HOVENSA is complying with the Beavon # 2 interim performance standards established pursuant to Subparagraph 45.b.iii, 45.b.iv, or 45.b.v. HOVENSA shall continue to follow the Tail Gas Incident investigation and corrective action procedure after termination of the Consent Decree, but the reporting and stipulated penalty provisions of this Section shall not apply after termination.

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

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i. If Tail Gas is combusted in an SRP incinerator, the SO_2 emissions are calculated using the methods outlined in Paragraph 69;

or

ii. If Tail Gas exceeding the 250 ppmvd SO_2 is emitted from a monitored SRP incinerator, then the following formula applies:

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

Where:

ER_{TGI}	=	Emissions from Tail Gas at the SRP 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

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In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for FRInc does not exist or is inoperable, then estimates will be used based on best engineering judgment.

71. Semi-Annual Reporting. Within thirty (30) Days after the end of the first semi-annual period after the Date of Entry, and semi-annually on each subsequent January 31 and July 31 thereafter, HOVENSA shall submit a semi-annual report that includes copies of each and every report of all Acid Gas Flaring Incidents and Tail Gas Incidents, as required in Paragraph 60, that HOVENSA was required to prepare during the previous six-month period (e.g., July to December). 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. Corrective Action completed; and

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

Such semi-annual report shall also include a summary analysis of any trends identified by HOVENSA in the number, Root Cause, types of corrective action, or other relevant information regarding Acid Gas and Tail Gas Incidents during the previous six-month period. HOVENSA shall submit the semi-annual Flaring Incident(s) reports as part of the semi-annual progress reports required pursuant to Part X (Reporting and Recordkeeping).

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L. Control of Hydrocarbon Flaring Incidents.

72. For Hydrocarbon Flaring Incidents occurring after the Date of Entry, HOVENSA shall follow the same investigative, reporting, and corrective action procedures as those set forth in Paragraphs 60 and 61 for Acid Gas Flaring Incidents; provided however, that in lieu of analyzing possible corrective actions under Paragraph 61 and taking interim and/or long-term corrective action under Paragraph 61 for a Hydrocarbon Flaring Incident attributable to the Startup or Shutdown of a unit that HOVENSA has previously analyzed under this Paragraph, HOVENSA may identify such prior analysis when submitting the report required under this Paragraph. HOVENSA shall submit the Hydrocarbon Flaring Incident(s) reports as part of the semi-annual progress reports required pursuant to Part X (Reporting and Recordkeeping).

M. Stipulated Penalties Under This Section.

73. Nothing in this Section shall be understood to subject HOVENSA to stipulated penalties for Hydrocarbon Flaring Incidents under Paragraph 72. HOVENSA shall be liable for the following stipulated penalties for violations of the requirements of Section V.K. For each violation, the amounts identified below apply on the first day of violation, and are calculated for each incremental period of violation (or portion thereof):

a. Acid Gas Flaring Incidents for which HOVENSA is liable under this Section.

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Tons of SO_2 Emitted in Acid Gas Flaring Incident	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is 3 hours or less	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is greater than 3 hours but less than or equal to 24 hours	Length of Time from Commencement of Flaring within the Acid Gas Flaring Incident to Termination of Flaring within the Acid Gas Flaring Incident is greater than 24 hours
5 Tons or Less	$500 per ton	$750 per ton	$1000 per ton
Greater than 5 tons, but less than or equal to 15 tons	$1,200 per ton	$1,800 per ton	$2,300 per ton, up to, but not exceeding, $32,500 in any one calendar day
Greater than 15 tons	$1,800 per ton, up to, but not exceeding, $32,500 in any one calendar day	$2,300 per ton, up to, but not exceeding, $32,500 in any one calendar day	$32,500 in any one calendar day

i. For purposes of calculating stipulated penalties pursuant to this Subparagraph, only one cell within the matrix shall apply. Thus, for example, for an Acid Gas Flaring Incident in which the Acid Gas Flaring starts at 1:00 p.m. and ends at 3:00 p.m., and for which 14.5 tons of SO_2 are emitted, the penalty would be $17,400 (14.5 x $1,200); the penalty would not be $13,900 [(5 x $500) + (9.5 x $1200)].

ii. For purposes of determining which column in the table set forth in this Subparagraph applies under circumstances in which Acid Gas Flaring occurs intermittently during an Acid Gas Flaring Incident, the Acid Gas Flaring shall be deemed to commence at the time that the Acid Gas Flaring that triggers the initiation of an Acid Gas Flaring Incident commences, and shall be deemed to terminate at the time of the termination of the last episode of Acid Gas Flaring

within the Acid Gas Flaring Incident. Thus, for example, for Acid Gas Flaring within an Acid Gas Flaring Incident that (i) starts at 1:00 p.m. on Day 1 and ends at 1:30 p.m. on Day 1; (ii) recommences at 4:00 p.m. on Day 1 and ends at 4:30 p.m. on Day 1; (iii) recommences at 1:00 a.m. on Day 2 and ends at 1:30 a.m. on Day 2; and (iv) no further Acid Gas Flaring occurs within the Acid Gas Flaring Incident, the AG Flaring within the AG Flaring Incident shall be deemed to last 12.5 hours – not 1.5 hours – and the column for Acid Gas Flaring of "greater than 3 hours but less than or equal to 24 hours" shall apply.

b. For failure to timely complete or submit any report required by Section V.K , or for completing or 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

c. For those corrective action(s) which HOVENSA (i) agrees to undertake following receipt of an objection by EPA pursuant to Paragraph 61; or (ii) is required to undertake following dispute resolution, then, from the date of EPA's receipt of HOVENSA's semi-annual report under Paragraph 71 until the date that either: (i) a final agreement is reached between EPA and HOVENSA regarding the corrective action; or (ii) a court order regarding the corrective action is entered, HOVENSA 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 HOVENSA's failure to implement the corrective action(s).

d. For failure to complete any corrective action under Paragraph 61 in accordance with the schedule for such corrective action agreed to by HOVENSA or imposed on HOVENSA pursuant to the dispute resolution provisions of this Consent Decree (with any such extensions thereto as to which EPA and HOVENSA 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

N. Certification.

74. All notices, reports, or any other submissions required of HOVENSA by Sections V.K and V.L shall contain the following certification:

> "I certify under penalty of law that this information was prepared under my direction or supervision by personnel qualified to properly gather and evaluate the information submitted. Based on my directions and after reasonable inquiry of the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete."

75. Except as otherwise provided herein, the reporting requirements set forth in Sections V.K and V.L do not relieve HOVENSA of its obligation to territorial authority or EPA to submit any other reports or information required by the CAA, or by any other territorial, federal or local requirements.

O. CERCLA/EPCRA.

76. To the extent that, during the course of HOVENSA's development of the Root Cause failure analysis required by Sections V.K and V.L, HOVENSA 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 HOVENSA 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 the date specified in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja") for compliance of the relevant Flaring Device with NSPS Subpart Ja.

P. Benzene Waste NESHAP Program.

Summary: In addition to continuing to comply with all applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste NESHAP" or "Subpart FF"), HOVENSA agrees to undertake the measures set forth in Section V.P to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions at the HOVENSA Refinery.

77. Current Subpart FF Status. HOVENSA has determined that the Refinery has a TAB of greater than 10 Mg/yr. The Refinery shall continue to comply with the compliance option set forth in 40 C.F.R. § 61.342(c) (hereinafter referred to as the "2 Mg Compliance Option").

78. Refinery Compliance Status Changes. On and after the Date of Lodging, HOVENSA shall only be allowed to change its compliance option to the 6 BQ Compliance Option set forth at 40 C.F.R. § 61.342(e).

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

a. Phase One of the Review and Verification Process. Within one (1) year of the Date of Lodging, HOVENSA shall complete a review and verification of the Refinery TAB

and its compliance with the Benzene Waste NESHAP (Phase One Review and Verification). HOVENSA's review and verification process shall include, but not be limited to:

i. An identification of each waste stream that is required to be included in the Refinery's TAB where these waste streams meet the definition of a waste under 40 C.F.R. § 61.341 (e.g., 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 used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream;

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

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

By no later than sixty (60) Days following the completion of Phase One Review and Verification, HOVENSA shall submit a Benzene Waste NESHAP Compliance Review and Verification report ("BWON Compliance Review and Verification Report") that sets forth and certifies the results of Phase One, including but not limited to the items identified in Subparagraphs (i) through (iv) of this Paragraph.

b. Phase Two of the Review and Verification 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 HOVENSA for sampling for benzene concentration. HOVENSA shall conduct the required sampling under representative conditions and submit the results to EPA within sixty (60) Days of receipt of EPA's request. HOVENSA shall 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. To the extent that EPA requires HOVENSA to re-sample any waste stream sampled by HOVENSA on or after January 1, 2007, HOVENSA may average the results of such sampling events. HOVENSA shall submit an amended BWON Compliance Review and Verification Report within ninety (90) Days following the date of the submittal of the required Phase Two sampling report, if Phase Two sampling is required by EPA.

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

a. Amended TAB Reports. If the results of the BWON Compliance Review and Verification Report(s) indicate(s) that the reports submitted by HOVENSA pursuant to 40 C.F.R. § 61.357(c) have not been filed or are inaccurate and/or do not satisfy the requirements of Subpart FF, HOVENSA shall submit, by no later than sixty (60) Days after completion of the BWON Compliance Review and Verification Report(s), an amended TAB report for the last year to EPA and the VIDPNR.

b. Submittal of Compliance Plan. If the results of the BWON Compliance Review and Verification Report identify any compliance issues, HOVENSA shall submit to EPA and the VIDPNR by no later than 180 Days after completion of the BWON Compliance Review

and Verification Report, a plan that identifies with specificity a schedule that HOVENSA will implement to ensure that the Refinery complies with the 2 Mg Compliance Option, as soon as practicable.

c. Review and Approval of Plans Submitted Pursuant to Subparagraph 80.b. Any plan submitted pursuant to Subparagraph 80.b, shall be subject to approval, disapproval or modification by EPA. Within sixty (60) Days after receiving any notification of disapproval or request for modification from EPA, HOVENSA shall submit to EPA and the VIDPNR a revised plan that responds to all identified deficiencies. Upon receipt of approval or approval with conditions, or if no approval, disapproval, or approval with conditions is provided by EPA, HOVENSA shall implement the plan according to the schedule provided in the plan. Disputes arising under this Subparagraph shall be resolved in accordance with the dispute resolution provisions of Part XVI (Retention of Jurisdiction/Dispute Resolution).

d. Certification of Compliance with the 2 Mg Compliance Option. By no later than thirty (30) Days after completion of the implementation of all actions, if any, required pursuant to Subparagraphs 80.b or 80.c to come into compliance with the 2 Mg Compliance Option, HOVENSA shall submit a report to EPA and the VIDPNR certifying that the Refinery complies with the Benzene Waste NESHAP.

81. Carbon Canisters and Individual Drain System Vents. As of the Date of Lodging, HOVENSA shall continue to operate the three-tier system for control of vents associated with the Subpart FF wastewater collection system. Vent controls are identified as either Type I (a single flow indicator "breather valve"), Type II ("breather valve" connected to a single carbon canister), or Type III (dual carbon canisters). All closed vent piping associated with these vent

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control systems will be monitored in accordance with the provisions associated with 40 C.F.R. § 61.349. HOVENSA shall comply with the following:

a. All Type I vents with flow indicators (40 C.F.R. § 61.346(b)) shall be visually inspected for flow on a daily schedule. Flow shall be indicated if the flow indicator on the breather valve has lifted. Any "breather valve" determined to relieve six or more times in any consecutive two-month period will be converted to a Type II control system. Installation of the carbon canister required by conversion to the Type II control shall be completed within two weeks. Daily visual inspection of the Type I control system will continue until conversion to a Type II control is completed.

b. All Type II vent control systems ("breather valve" connected to a single carbon canister) shall be visually inspected on a daily schedule.

i. If the "breather valve" is determined not to have relieved, no additional monitoring is required. Secondly, if the "breather valve" is visually inspected and determined to have relieved, then the discharge opening of the carbon canister will be immediately monitored for benzene. If benzene concentration of carbon canister discharge is determined to be less than 5 ppm, no additional actions are required. If the benzene concentration of the carbon canister discharge is determined to be equal to or greater than 5 ppm, the carbon canister will be replaced by the end of the next Day.

ii. For any Type II vent control system, if carbon canister replacement is required two or more times in any four consecutive week period the control system will be converted to a Type III system. Installation of the dual carbon canister system required by conversion to the Type III control shall be completed

within two weeks. Daily inspection and monitoring (if required) of the Type II control system will continue until conversion to a Type III control is completed.

c. All Type III vent control systems will be operated in the manner described in Subparagraphs c.i. through c.vii.

i. Except as expressly permitted under Subparagraph c.v, HOVENSA shall not use single carbon canisters for any new process units or installations that require controls pursuant to the Benzene Waste NESHAP.

ii. For dual carbon canister systems, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 5 ppm benzene.

iii. HOVENSA shall monitor for breakthrough between the primary and secondary carbon canisters in accordance with the frequency specified in 40 C.F.R. § 61.354(d), or monthly, whichever is more frequent. This requirement shall commence within seven (7) Days after installation of a new, dual carbon canister system.

iv. HOVENSA shall replace the original primary carbon canisters immediately when breakthrough is detected between the primary and secondary canister. The original secondary carbon canister will become the new primary carbon canister and a fresh carbon canister will become the secondary canister, or both canisters may be replaced. For purposes of this Subparagraph, "immediately" shall mean by the end of the next calendar Day.

v. Temporary Applications. HOVENSA may utilize 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 Consent Decree as any reading of benzene above 5 ppm. HOVENSA shall monitor for breakthrough from single carbon canisters each calendar day. HOVENSA shall replace the single carbon canister with a fresh carbon canister, discontinue flow, or route the stream to an alternate, appropriate device immediately when breakthrough is detected. For this Subparagraph, "immediately" shall mean by the end of the next Day. If HOVENSA discontinues flow to the single carbon canister or routes the stream to an alternate, appropriate control device, such canister must be replaced before it is returned to service.

vi. HOVENSA shall 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.

vii. HOVENSA shall maintain records associated with the requirements of this Paragraph in accordance with or as under 40 C.F.R. § 61.356(j)(10), including the monitoring readings observed and the constituents being monitored.

82. Laboratory Audits. All laboratories that perform analyses of HOVENSA's Benzene Waste NESHAP samples shall be audited to ensure that proper analytical and quality assurance/quality control procedures are followed for such samples. For purposes of this Paragraph, audits can include audits conducted by parties other than HOVENSA.

a. Prior to conducting its Phase One Review and Verification process set forth in Paragraph 79.a, audits shall be completed of all laboratories used to perform analyses of

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benzene waste NESHAP samples to ensure that proper analytical and quality assurance/quality control procedures are followed. In addition, an audit shall be conducted of any laboratory used for analyses of benzene samples prior to such use.

b. Subsequent laboratory audits shall be conducted for each laboratory continuing to perform analyses of HOVENSA's Benzene Waste NESHAP samples, such that each laboratory is audited every two (2) years for the life of the Consent Decree.

83. Annual Program. After the Date of Lodging, HOVENSA shall continue to use its written management of change procedures to review process information and construction projects, to ensure that all new benzene waste streams are included in HOVENSA's waste stream inventory.

84. Training. HOVENSA shall implement the following training program at the Refinery:

a. Within ninety (90) Days from the Date of Lodging or from the installation of any new benzene control equipment, HOVENSA shall complete the development of standard operating procedures for all control equipment used to comply with the Benzene Waste NESHAP.

b. Within nine (9) months from the Date of Entry, HOVENSA shall develop the BWON training program pursuant to the criteria in Appendix E ("HOVENSA'S LDAR and BWON Training Program Summary") and submit it to EPA;

c. Within twelve (12) months from the Date of Entry, HOVENSA shall provide an annual (i.e., once each calendar year) training program for employees (which shall include contract employees for purposes of this Paragraph) asked to draw benzene waste samples

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as specified in 40 C.F.R. § 61.355. Such employees shall be trained prior to collecting samples and receive training annually.

d. All employees assigned to operate control equipment shall complete an initial training program on procedures specified in Subparagraph 84.a. This training shall be provided within twenty-four (24) months from Date of Entry and "refresher" training shall be performed every three (3) years thereafter, until termination of this Decree.

e. Training comparable to that specified in Subparagraph 84.d. shall also be provided to any persons who subsequently become operators, prior to their assumption of this duty or the installation of the equipment.

f. As part of HOVENSA's training programs, HOVENSA must require any contractor hired to operate benzene control equipment or perform benzene sampling to receive the training required by this Paragraph and HOVENSA shall maintain records of such training.

85. Waste/Slop/Off-Spec Oil Management.

a. Control Status of and Plan to Quantify Uncontrolled Waste/Slop/Off-Spec Oil Streams.

Within one (1) year from the Date of Lodging, HOVENSA shall submit to EPA and the VIDPNR a plan 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. Representatives from HOVENSA and EPA thereafter may confer about the appropriate characterization of the waste/slop/off-spec oil streams as benzene waste streams and the necessary controls, if any, for the waste management units handling such oil streams for

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purposes of the Refinery's TAB calculation and/or compliance with the 2 Mg Compliance Option. If requested by EPA, HOVENSA shall promptly submit revised schematics that reflect the Parties' agreements regarding the characterization of these oil streams and the appropriate control standards. HOVENSA shall use these plans and schematics in preparing the end-of-line sampling plans required under Paragraph 87.

b. Non-Aqueous Benzene Waste Streams. On and after the Date of Lodging, all waste management units handling non-exempt, non-aqueous benzene wastes, as defined in Subpart FF, shall meet the applicable control standards of Subpart FF.

c. Aqueous Benzene Waste Streams. For purposes of calculating the TAB pursuant to the requirements of 40 C.F.R. § 61.342(a), HOVENSA shall include all waste/slop/off-spec oil streams that become "aqueous" until such streams are recycled to a process or put into a process feed tank (unless the tank is used primarily for the storage of wastes). Appropriate adjustments shall be made to such calculations to avoid the double counting of benzene. For purposes of complying with the 2 Mg Compliance Option, all waste management units handling aqueous benzene waste streams shall either meet the applicable control standards of Subpart FF or shall have their uncontrolled benzene quantity count toward the applicable 2 Mg limit.

86. Benzene Waste Operations Sampling Plans: General. Within one (1) year of the Date of Lodging, HOVENSA will submit to EPA and the VIDPNR for EPA approval, benzene waste operations sampling plans designed to describe the sampling of benzene waste streams that HOVENSA will utilize to estimate quarterly and annual TABs.

87. Benzene Waste Operations Sampling Plans: Content Requirements.

The sampling plan shall include, but need not be limited to:

a. Quarterly sampling of all uncontrolled waste streams that count toward the 2 Mg/yr calculation and could contain greater than 0.05 Mg/yr or more.

b. Quarterly sampling of all uncontrolled waste streams that qualify for the 10 ppmw exemption (40 C.F.R. § 61.342(C)(2)) and contain greater than 0.1 Mg/yr of benzene.

c. The proposed End-of-Line (EOL) sampling locations and methods for flow calculations to be used in calculating projected quarterly and annual TAB calculations under the terms of Paragraph 90. Based on the current configuration of the Refinery's wastewater system, overflows from API separators 1, 2, and 3 are the only "routine" wastewater benzene streams not controlled in accordance with Subpart FF. Therefore, sampling of the three API overflow streams will constitute the individual EOL locations. The uncontrolled benzene contributions from these individual sources will be included in the calculations required by Paragraph 90.

d. The sampling plan will require HOVENSA to take, and have analyzed, in each Calendar Quarter, at least three representative samples from each sampling location identified in the plan required by this Paragraph.

88. Benzene Waste Operations Sampling Plans: Timing for Implementation. HOVENSA will implement the sampling required under the sampling plan during the first full Calendar Quarter after HOVENSA submits the plan. HOVENSA will continue to implement the sampling plan unless and until (a) EPA disapproves the plan; or (b) HOVENSA modifies the plan, with EPA's approval, under Paragraph 89.

89. Benzene Waste Operations Sampling Plans: Modifications.

a. Changes in Processes, Operations, or Other Factors. If changes in processes, operations, or other factors lead HOVENSA to conclude that the sampling plan may

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no longer provide an accurate basis for estimating the Refinery's quarterly or annual uncontrolled benzene quantity under Paragraph 90, then by no later than ninety (90) Days after HOVENSA determines that the plan no longer provides an accurate measure, HOVENSA will submit to EPA and the VIDPNR a revised plan for EPA approval. In the first full Calendar Quarter after submitting the revised plan, HOVENSA will implement the revised plan. HOVENSA will continue to implement the revised plan unless and until EPA disapproves the revised plan.

b. Requests for Modifications to the Sampling Frequency. After two (2) years of implementing a sampling plan, HOVENSA may submit a request to EPA for approval, with a copy to the VIDPNR, to reduce the facility's sampling frequency. EPA will not unreasonably withhold its consent. HOVENSA will not implement any proposed revisions under this Subparagraph until EPA provides its approval.

90. Quarterly and Annual Estimations of Uncontrolled Benzene Quantities. At the end of each Calendar Quarter and based on sampling results and approved flow calculations, HOVENSA will calculate a quarterly and projected annual uncontrolled benzene quantity.

91. In making the calculations required by Paragraph 90, HOVENSA will use the average of the three samples collected at each sampling location. If these calculations do not identify any potential violations of the benzene waste operations NESHAP, HOVENSA will submit these calculations in the reports due under this Section.

92. Corrective Measures: Basis. If the quarterly or annual uncontrolled benzene calculations required pursuant to Paragraph 90 project or demonstrate that the uncontrolled benzene quantity exceeds 2 Mg/yr, then by no later than sixty (60) Days after the end of the Calendar Quarter, HOVENSA will submit a compliance assurance plan to EPA for approval,

with a copy to the VIDPNR. In that compliance assurance plan, HOVENSA will identify the quantity and cause(s) of the potentially-elevated benzene quantities, all corrective actions that HOVENSA has taken or plans to take to ensure that the cause(s) will not recur, and the schedule of actions that HOVENSA will take to ensure that the Refinery complies with the Benzene Waste Operations NESHAP for the calendar compliance year. HOVENSA will implement the plan unless and until EPA disapproves.

93. Miscellaneous Measures.

a. As of the Date of Lodging, HOVENSA shall:

i. Conduct monthly visual inspections of and, if appropriate, refill all water traps used to comply with Subpart FF within the Refinery's individual drain systems;

ii. Ensure that all segregated stormwater drains are marked at the drain (color coding may be used);

iii. Conduct monitoring of existing API Separators 1, 2, and 3 or any new Subpart FF-regulated oil/water separators as outlined below:

(1) Conduct semi-annual seal gap measurements on all floating roof portions in accordance with 40 C.F.R. § 60.693-2.

(2) The fixed roof portions of all Subpart FF regulated oil/water separators shall be monitored on a quarterly basis if Method 21 monitoring conducted pursuant 40 C.F.R. § 61.355(h) determine a leak rate of greater than one (1) percent. Monitoring of the fixed roof portion of all Subpart FF required oil/water separators will be conducted annually if Method 21 monitoring conducted pursuant to 40 C.F.R. § 61.355(h)

determine a leak rate of one (1) percent or less.

(3) A current listing, as of Date of Lodging, of all Method 21 monitoring locations for API Separators 1, 2, and 3 is attached in Appendix F ("Method 21 Monitoring Locations for API Separators 1, 2 and 3"). When modifications to the API separators occur, HOVENSA shall update and maintain a current listing of all monitoring locations for API Separators 1, 2, and 3.

94. Record Keeping and Reporting Requirements for this Section Outside of the Reports Required under 40 C.F.R. § 61.357 or under the Progress Report Procedures of Part X (Reporting and Recordkeeping). At the times specified in the applicable provisions of this Section, HOVENSA will submit, as and to the extent required, the following reports to EPA and the VIDPNR:

a. BWON Compliance Review and Verification Report (Subparagraph 79.a), as amended, if necessary (Subparagraph 79.b);

b. Amended TAB Report, if necessary (Subparagraph 80.a.);

c. Plan for the Refinery to come into compliance with the 2 Mg Compliance Option upon discovering that the uncontrolled benzene quantity calculated for Paragraph 90, or through other means, exceeds 2 Mg/yr (Paragraph 92);

d. Compliance certification, if necessary (Subparagraph 80.d);

e. Schematics of waste/slop/off-spec oil movements (Subparagraph 85.a.), as revised, if necessary; and

f. Sampling Plans (Paragraph 86), and revised Sampling Plans, if necessary (Subparagraph 89.a).

95. 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 Part X (Reporting and Recordkeeping).

HOVENSA 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) or in the reports due pursuant to Part X (Reporting and Recordkeeping):

a. Sampling Results under Paragraph 86. 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/or subsequent training conducted in accordance with Paragraph 84; and

c. Laboratory Audits. Initial and subsequent audits conducted pursuant to Paragraph 82 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.

96. At any time after two (2) years of reporting pursuant to the requirements of Paragraph 95, HOVENSA may submit a request to EPA to modify the reporting frequency for any or all of the reporting categories of Paragraph 95. This request may include a request to report the projected calendar year TAB and uncontrolled benzene quantity in the annual report due on March 1st of each year required by 40 C.F.R. §61.357(d). HOVENSA will not change the due dates for its reports under Paragraph 95 unless and until EPA approves HOVENSA's request.

97. Certifications Required in this Section.

Certifications required under this Section will be made in accordance with the provisions of Part X (Recording and Recordkeeping).

98. Agencies to Receive Reports, Plans and Certifications Required in this Section; Number of Copies. Unless otherwise specified in this Section, HOVENSA shall submit all reports, plans and certifications required to be submitted under this Section to EPA, EPA Region 2 and the VIDPNR. For each submission, HOVENSA shall submit two copies to EPA, two copies to EPA Region 2, and two copies to the VIDPNR. By agreement between HOVENSA and each of the offices that are to receive the materials in this Section, HOVENSA may submit the materials electronically with a single electronic submission.

Q. NSPS QQQ.

99. Within twelve (12) months of the Date of Lodging, HOVENSA shall prepare and submit to EPA a compliance plan specifying the projects necessary to bring the FCCU and Coker Drain Systems into compliance with 40 C.F.R. Subpart QQQ. Such compliance plan shall include an implementation schedule, and HOVENSA shall complete the projects within the time provided by the compliance plan, but by no later than June 30, 2011.

R. Leak Detection and Repair ("LDAR") Program.

100. Introduction. In order to minimize or eliminate fugitive emissions of volatile organic compounds (VOCs), benzene, volatile hazardous air pollutants (VHAPs), and organic hazardous air pollutants (HAPs) from equipment in light liquid and/or in gas/vapor service, HOVENSA shall comply with the leak detection and repair (LDAR) requirements of this Section. The terms "in light liquid service" and "in gas/vapor service" shall have the definitions

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set forth in the applicable provisions of 40 C.F.R. Part 60, Subpart VV and GGG; Part 61, Subparts J and V; Part 63, Subparts F, H, and CC.

101. No later than three (3) years after the Date of Lodging, the group of all equipment within each process unit (as "equipment" and "process unit" are defined by 40 C.F.R. § 60.591) and each compressor shall become affected facilities under 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. Valves which HOVENSA currently monitors in these process units on a voluntary basis shall continue to be monitored, at least annually, until such process units have become affected facilities under NSPS Subpart GGG pursuant to this Paragraph. On and after the date the lower leak definitions in Paragraph 109 become effective, HOVENSA shall perform leak percentage calculations in NSPS Subpart GGG process units based on the total number of light liquid and gas/vapor service valves monitored in the process unit during the period.

102. No later than ninety (90) Days after the Date of Lodging, HOVENSA shall submit a plan and schedule, for review and approval by EPA, for bringing the Refinery into compliance with the requirements of 40 C.F.R. Part 60, Subpart GGG, and the requirements of this Section which will include interim milestone dates, designed to achieve full compliance within three (3) years after the Date of Lodging. EPA shall notify HOVENSA after the plan is approved. If the plan is not approved, HOVENSA shall modify and resubmit the plan as required by EPA.

103. Written Refinery-Wide LDAR Program. No later than nine (9) months after the Date of Lodging, HOVENSA shall develop and maintain a written refinery-wide program for compliance with applicable LDAR Regulations and the requirements of this Consent Decree, which shall include:

a. Procedures to identify all equipment in light liquid and/or in gas/vapor service that is subject to the LDAR regulations and has the potential to leak VOCs, HAPs, VHAPs, and benzene within process units;

b. Procedures for identifying leaking equipment within process units;

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

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

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.

HOVENSA shall submit to EPA a copy of the written refinery-wide LDAR program developed pursuant to this Paragraph in the next semi-annual report following the development of the program.

104. Alternate Leak Detection Method. With EPA's written approval and regulations allowing for the substitution of an optical imaging technology-based LDAR program for a Method 21-based LDAR program have been adopted by EPA and are in effect, HOVENSA may begin using an alternate leak detection method. If necessary to implement this Paragraph, the Parties shall make appropriate modifications to this Consent Decree in accordance with Paragraph 228. EPA may request that HOVENSA submit a protocol demonstrating that an optical imaging-based LDAR program is equivalent to or better than a Method 21-based LDAR program.

105. Training. HOVENSA shall implement the following training program at the Refinery:

a. Within nine (9) months from the Date of Entry, develop the LDAR training program pursuant to the criteria in Appendix E ("HOVENSA'S LDAR and BWON Training Program Summary") and submit it to EPA;

b. Within twelve (12) months from the Date of Entry, provide LDAR training to existing personnel assigned to LDAR responsibilities (including but not limited to monitoring, recordkeeping, reporting, or data management). For newly hired personnel with LDAR program responsibilities hired after twelve (12) months from Date of Entry, provide LDAR training prior to the personnel beginning work. All employees assigned to LDAR responsibilities shall receive training annually.

c. For other Refinery operations and maintenance personnel whose duties include limited LDAR responsibilities, provide training developed pursuant to the criteria in Appendix E ("HOVENSA'S LDAR and BWON Training Program Summary") that includes instruction on those aspects of LDAR relevant to the person's duties. This training shall be provided within twenty-four (24) months from Date of Entry, and every three (3) years thereafter, until termination of this Consent Decree. For newly hired operations and maintenance personnel hired after twenty-four (24) months from Date of Entry, such training shall be provided within six (6) months of hiring; and

d. If contractors are used to fulfill the requirements of this Section, HOVENSA shall require that such contractors shall be trained as required by this Paragraph, and HOVENSA shall maintain records of such training.

106. LDAR Audits. By no later than one (1) year from the Date of Lodging, HOVENSA shall implement the refinery-wide audits set forth in this Paragraph, to ensure the Refinery's compliance with all applicable LDAR Regulations and the requirements of this

Consent Decree. The LDAR audits 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 the LDAR audits, leak rates shall be calculated for each process unit where comparative monitoring was performed.

a. Initial Compliance Audit. Within one (1) year from the Date of Lodging, HOVENSA shall complete a refinery-wide third-party audit of its compliance with the LDAR Regulations and the requirements of applicable Sections of this Consent Decree, which includes, at a minimum, each of the audit requirements set forth in this Paragraph. For purposes of this requirement, "third party" may include a qualified contractor, consultant, industry group, or trade association. Within thirty (30) Days of receipt of the completed audit, HOVENSA shall report to EPA and the VIDPNR any areas of non-compliance identified as a result of its audit and submit in writing a proposed compliance schedule for correcting the non-compliance. If the proposed compliance schedule extends greater than sixty (60) Days beyond the audit completion date, HOVENSA must seek approval of the compliance schedule from EPA. HOVENSA shall implement the compliance schedule as proposed until the schedule is approved or disapproved by EPA. Within one (1) year of Date of Entry, HOVENSA shall certify to EPA that the Refinery:

i. Is in compliance;

ii. Has completed related corrective action and/or is on a compliance schedule (if necessary); and

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iii. Shall specifically certify that all existing equipment has been identified and included in the facility LDAR program, to the extent required by applicable regulations and this Consent Decree, as of the date such certification is made.

b. Subsequent Audits.

i. Third-Party Audits. HOVENSA shall retain an independent contractor(s) to perform a third-party audit of its LDAR program compliance with applicable LDAR Regulations and the requirements under this Section, at least once every four (4) years, in the same Calendar Quarter.

ii. Internal Audits. HOVENSA shall conduct internal audits by retaining third parties or having personnel from a refiner under common ownership with an entity that owns at least a 25% ownership stake in HOVENSA, provided that such refiner is a signatory to a global refinery Consent Decree, audit HOVENSA's LDAR program compliance with applicable LDAR Regulations and the requirements under this Section. HOVENSA shall complete the first internal LDAR audit within the same Calendar Quarter and by no later than two (2) years after its initial third-party audit was conducted according to Subparagraph 106.a. Internal audits shall be conducted, in the same Calendar Quarter, at least once every four (4) years thereafter.

107. Implementation of Actions Necessary to Correct Non-Compliance. If the results of any of the audits conducted pursuant to this Section identify any area(s) of non-compliance, HOVENSA shall implement, as soon as practicable, all appropriate steps necessary to correct the area(s) of non-compliance and to prevent a recurrence of the cause of the non-compliance, to the

extent practicable. For purposes of this Paragraph, if a ratio of the process-unit valve leak percentage established through a comparative monitoring audit conducted pursuant to Paragraph 106, and the average valve leak percentage reported for the process unit for the last four (4) monitoring periods preceding the audit, is equal to or greater than 3.0, and provided the auditor identified at least three (3) leaking valves in the process unit, it shall be deemed an area of non-compliance and cause for corrective action. If the calculated ratio yields an infinite result, HOVENSA shall assume one (1) leaking valve was found in the process unit through its routine monitoring during the four (4) monitoring periods. In the Semi-Annual LDAR Report submitted pursuant to the provisions of Paragraph 123 covering the period when an audit was conducted, HOVENSA shall submit the results of the audit, and shall certify to EPA that the audit has been completed and that the Refinery is in compliance or on a compliance schedule.

108. Retention of Audit Reports. Until termination of the Consent Decree, HOVENSA shall retain the audit reports generated pursuant to this Section and shall maintain a written record of the corrective actions taken in response to any deficiencies identified in any audits.

109. Internal Leak Definition for Valves and Pumps. HOVENSA 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) or applicable LDAR Regulations, within three (3) years of the Date of Lodging:

a. Leak Definition for Valves. 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. An internal leak definition of 2000 ppm VOCs for refinery pumps in light liquid and/or in gas/vapor service.

110. Reporting Leaks of Valves and Pumps. For regulatory reporting purposes, HOVENSA 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 109.

111. Recording, Tracking, Repairing and Remonitoring Leaks Based on the Internal Leak Definitions. HOVENSA shall record, track, repair and remonitor all leaks in excess of the internal leak definitions of Paragraph 109 (at such time as those definitions become applicable) in accordance with applicable provisions of the LDAR Regulations, except that HOVENSA shall have five (5) Days to make an initial attempt at repair, and fifteen (15) Days either to make final repairs and remonitor the leak or to manage the leak according to Paragraph 121.

112. HOVENSA Valve Preventative Leak Maintenance Program. Within eighteen (18) months of the Date of Lodging, HOVENSA shall implement a Valve Preventative Leak Maintenance Program according to Appendix G ("Valve Preventative Leak Maintenance Procedure Workflow Diagram") and this Paragraph. In the event of any inconsistency between the language of this Paragraph and Appendix G ("Valve Preventative Leak Maintenance Procedure Workflow Diagram"), the provisions of this Paragraph shall control.

a. Under the Valve Preventative Leak Maintenance Program, HOVENSA shall perform the following surveys, at the times and/or intervals established in Appendix G ("Valve Preventative Leak Maintenance Procedure Workflow Diagram"):

i. External Valve Survey. HOVENSA shall assess the external and process conditions of valves, including but not limited to the following: condition of the valve stem (e.g., pitted, corroded, or scarred), condition of the packing gland, follower, and gland bolts (e.g., corroded, stripped threads, or bottomed-

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out), the overall condition of the valve (e.g., corroded), and the design process temperature, pressure, and hydrocarbon service of the valve. HOVENSA shall also determine as part of the external valve survey whether or not the valve can be isolated for repair while in service, whether or not the valve can be repaired through back-seating, live-loading, or other on-line repair/repack techniques, and/or whether the valve requires a process unit shutdown for repair.

ii. Stuffing Box Survey. As provided in Appendix G ("Valve Preventative Leak Maintenance Procedure Workflow Diagram"), HOVENSA shall assess the valve stuffing box condition, including but not limited to the following: inside diameter, outside diameter, depth of stuffing box, packing type, and amount of packing.

b. HOVENSA shall repack or replace valves, prior to or during process unit turnarounds or tank outages, as outlined in Appendix G ("Valve Preventative Leak Maintenance Procedure Workflow Diagram").

c. HOVENSA shall ensure all newly installed valves are fitted, prior to installation, with packing or valve technology which is designed by the manufacturer to prevent leaks above 100 ppm for a period of at least five (5) years after installation.

d. HOVENSA shall establish a comprehensive tracking database to record the following Valve Preventative Leak Maintenance Program information:

i. For newly-installed valves, the date each valve was installed and the type of packing present in the valve upon installation;

ii. The results of all external valve surveys and stuffing box surveys with valve isolation determination;

iii. For each valve required to undergo an external valve survey, the date and type of final repair action undertaken and the name of person performing the repair action. If no repair action was taken, record the justification for why no action was taken; and

iv. The feasibility of performing live-loading or back-seating repair techniques on equipment still in VOC-service.

e. HOVENSA shall analyze the information collected under Subparagraph 112.d at least once every two (2) years after the requirements of this Paragraph become effective, and shall specifically analyze the information for trends in equipment failures, successful repair techniques, and other data to help increase the effectiveness of the Valve Preventative Leak Maintenance Program. HOVENSA shall report the results of this evaluation to EPA in the next periodic report due after the analysis required by this Subparagraph.

113. LDAR Monitoring Frequency.

a. Pumps. When the lower leak definition for pumps becomes applicable pursuant to Paragraph 109, HOVENSA shall monitor pumps at the lower leak definition on a monthly basis.

b. Valves. Unless more frequent monitoring is required by applicable federal requirements, HOVENSA shall monitor valves, at the internal leak definition under Paragraph 109, according to the monitoring frequencies required by 40 C.F.R. §§ 60.482-7 and 60.483-2, except that under Section 60.482-7(c)(2), if a leak is detected, the valve shall be monitored monthly until a leak is not detected for 12 consecutive months.

114. Electronic Storage of LDAR Data. On and after the Date of Lodging, HOVENSA shall record all LDAR monitoring and repair data in an electronic database.

115. Electronic Monitoring and Reporting of LDAR Data. On and after the Date of Lodging, HOVENSA shall use dataloggers and/or electronic data collection devices during LDAR monitoring. HOVENSA or contractor(s) retained by HOVENSA shall use their best efforts to transfer each monitoring reading to the database within five (5) Days of collecting the reading. For all monitoring events in which an electronic data collection device is used, the collected monitoring data shall include a time and date stamp, screening value, operator identification, and instrument identification. HOVENSA may use paper logs where necessary or more feasible (e.g., small rounds, remonitoring, or when dataloggers are not available or broken), and shall record the identification of the technician undertaking the monitoring, the date, time, screening value, and the identification of the monitoring equipment. HOVENSA shall transfer any manually recorded monitoring data to the electronic database within seven (7) Days of monitoring.

116. QA/QC of LDAR Data. By no later than ninety (90) Days after the Date of Lodging, HOVENSA shall develop and implement a procedure to ensure a quality assurance/quality control ("QA/QC") review of all data generated by each LDAR monitoring technician. This QA/QC procedure shall require:

a. Monitoring technician(s) to review and certify the accuracy of the monitoring data they collected each week; 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.

117. LDAR Personnel. By no later than the Date of Lodging, HOVENSA shall maintain its current program which holds HOVENSA LDAR personnel accountable for LDAR

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performance. HOVENSA shall maintain a position with responsibility for LDAR management and with the authority to implement improvements.

118. Adding New Valves and Pumps. On and after the Date of Lodging, HOVENSA shall continue to implement its tracking program for maintenance records (e.g., a Management of Change program) to ensure that valves and pumps subject to the LDAR Regulations and this Consent Decree, which are installed and placed into VOC service, are integrated into the LDAR program.

119. Calibration. HOVENSA 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.

120. Calibration Drift Assessment. Within six calendar months of the Date of Lodging, HOVENSA shall conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift, at a minimum. HOVENSA 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, HOVENSA 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 subject to the LDAR Regulations and this Consent Decree 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.

121. Extended Maintenance and Delay of Repair. Beginning no later than one (1) year from Date of Lodging, HOVENSA shall eliminate normal use of delay of repair exemptions for equipment in VOC service (as defined in 40 C.F.R. § 60.481) under applicable regulations and this Consent Decree, and shall perform monitoring and maintenance as follows: perform monitoring and "drill and tap" repairs according to Subparagraphs 121.a and b, and perform extended maintenance to attempt to stop the leak source as outlined under Subparagraph 121.c. If HOVENSA, after having implemented one or more of the extended maintenance leak repair techniques identified in Subparagraph 121.c, cannot repair the leak, HOVENSA may delay repair of the leak until the next process unit shutdown. Extended maintenance shall not be required where any of the following is the case: (i) for the period beginning no later than one (1) year from the Date of Lodging through five (5) years of the Date of Entry, the number of valves on the delay of repair list does not exceed 0.1 percent refinery-wide upon determination of delay of repair; and for the period beginning no later than five (5) years of the Date of Entry, the number of valves on the delay of repair list does not exceed 0.05 percent refinery-wide upon determination of delay of repair; or (ii) the feasible extended maintenance techniques listed in Subparagraph 121.c would result in a shutdown of a process unit or create an unsafe operating condition. HOVENSA shall report the circumstances (why it was required, what was actually performed, whether it was successful) of all leaks attempted to be repaired under Subparagraph 121.c in semi-annual reports required under Paragraph 71.

a. For all equipment:

i. Require sign-off by the Area Manager or designee by the 15th day after identification of the leak that the equipment cannot be removed from VOC

service and is technically infeasible to repair without implementation of extended maintenance as set forth in Subparagraph 121.c; and

ii. Monitor monthly equipment on the "delay of repair" list which remains in VOC service.

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 HOVENSA can demonstrate that there is a safety, mechanical, or adverse environmental concern posed by attempting to repair the leak in this manner. HOVENSA shall perform multiple "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, HOVENSA 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.

c. If the repair methods undertaken pursuant to Subparagraph 121.b have not stopped the source of the leak, HOVENSA shall, within sixty (60) Days of identifying the leak, perform at least one extended maintenance attempt to stop the leak source, including building an enclosure for the equipment which meets 'no detectable emissions' standards under NSPS Subpart VV, line-stopping (i.e., inserting a plugging device inside the line so the contents can temporarily be held back while maintenance is performed on-line), hot-tapping (i.e., connecting a new piping service to an existing line with no interruption of flow), or pipe-freezing (i.e., holding back system pressure in a section of piping using freeze chambers which are installed over a short section of piping and injected with liquid nitrogen or CO_2). HOVENSA shall report the circumstances (why it was required, what was actually performed, was it successful) of all leaks attempted to be repaired or exempt from repair under this Subparagraph in semi-annual reports

required under Part X (Reporting and Recordkeeping). If HOVENSA applies a different extended repair technique than those listed in this Subparagraph, HOVENSA shall report such technique under Paragraph 123 and explain how it is similarly effective at stopping the leak, and shall specifically explain why this technique could not be applied within fifteen (15) Days of identification of the leak.

122. Recordkeeping Requirements for this Section. For at least two (2) years after termination of this Consent Decree, HOVENSA shall retain records to demonstrate its compliance with the requirements of this Section.

123. As part of the reports required under 40 C.F.R. §§ 60.487 and 63.654 (Semi-Annual LDAR Report), HOVENSA shall include the following information, at the following times:

a. The next Semi-Annual LDAR Report after the applicable compliance date for each requirement shall include notification of the following:

i. Implementation of the "Valve Preventative Leak Maintenance Program" of Paragraph 112;

ii. Implementation of QA/QC procedures for review of data generated by LDAR technicians as required by Paragraph 116;

iii. Development of a tracking program for new valves and pumps added during maintenance and construction (Management of Change Program) as required by Paragraph 118;

iv. Implementation of the calibration and calibration drift assessment procedures of Paragraphs 119 and 120;

v. Implementation of the "delay of repair" procedures of Paragraph 121;

vi. Utilization of electronic data collection devices during LDAR monitoring, pursuant to the requirements of Paragraph 115;

vii. Implementation of the lower leak definitions pursuant to the requirements of Paragraph 109; and

viii. Implementation of the monitoring requirements of Subparagraphs 113.a and 113.b.

b. Until termination of this Section, each Semi-Annual LDAR Report that HOVENSA submits shall include:

i. An identification of each audit, if any, that was conducted pursuant to the requirements of Paragraph 106 in the previous semi-annual period. For each audit identified, the report shall include an identification of the auditors, a summary of the audit results, and a summary of the actions that HOVENSA took or intends to take to correct all deficiencies identified in the audits.

ii. Training. Information identifying the measures taken to comply with the provisions of Paragraph 105;

iii. Valve Preventative Leak Maintenance Program. The results of each evaluation performed according to Subparagraph 112.e during the previous semi-annual period; and

iv. Monitoring. The following information on LDAR monitoring:

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

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

(3) The number of valves and pumps monitored in each process unit and if less than the number in (2), include an explanation as to why;

(4) The number of valves and pumps found leaking in each process unit during the period, and the valve leak percentage for each process unit;

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

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

(7) A list of all equipment currently on the "delay of repair" list, the date each component was placed on the list, the date each such component was determined to be leaking above applicable leak definitions, the circumstances of any extended maintenance repairs under Subparagraph 121.c, the associated monitoring results for each piece of equipment, and whether such activities were completed in a timely manner;

(8) The number of external valve surveys and the number of stuffing box surveys not completed and recorded as required under Paragraph 112;

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(9) The number of valves not repacked or replaced and recorded as required under Paragraph 112;

(10) The number of valves which were newly installed without appropriate packing or valve technology, as required under Paragraph 112; and

(11) The number of missed or untimely repairs under Paragraph 111.

VI. PERMITTING

124. Obtaining Permit Limits for Consent Decree Emission Limits That Are Effective Upon Date of Entry. Except as set forth below, by no later than 180 Days after the Date of Entry, HOVENSA shall submit applications to the relevant permitting authority to incorporate the emission limits and standards required by this Consent Decree that are effective as of the Date of Entry into federally enforceable minor or major new source review permits or other permits (other than Title V permits) that are federally enforceable. However, if another application for a permit, permit renewal, or permit modification is due for the same emissions unit within 365 Days of the Date of Entry, HOVENSA shall submit both such applications or a combined application by the application/renewal date. Upon issuance of such permits or in conjunction with such permitting, HOVENSA shall file any applications necessary to incorporate the requirements of those permits into the Title V permit for the Refinery when issued.

125. Obtaining Permit Limits For Consent Decree Emission Limits That Become Effective After Date of Entry. Except as set forth below, as soon as practicable, but in no event later than 180 Days after the effective date or establishment of any emission limits and standards required by this Consent Decree other than those effective as of the Date of Entry, HOVENSA

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shall submit applications to the relevant permitting authority to incorporate those emission limits and standards into federally enforceable minor or major new source review permits, or other permits (other than Title V permits) that are federally enforceable. Upon issuance of such permit or in conjunction with such permitting, HOVENSA shall file any applications necessary to incorporate the requirements of those permits into the Title V permit for the Refinery when issued.

126. Mechanism for Title V Incorporation. The Parties agree that the incorporation of any emission limits or other standards into the Title V permit for the Refinery as required by Paragraphs 124 and 125 shall be in accordance with the applicable territorial Title V rules.

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

VII. EMISSION CREDIT GENERATION

Summary. This Part addresses the use of emissions reductions that 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.

128. General Prohibition. HOVENSA shall not generate or use any NO_x, SO_2, PM, PM-10, PM-2.5, VOC, or CO emissions reductions, or apply for and obtain any emission reduction credits, that result from any projects 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.

129. Exception to General Prohibition. Notwithstanding the general prohibition set forth in Paragraph 128, HOVENSA may use 41 tons per year of NO_x, 61 tons per year of CO,

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and 14 tons per year of PM from CD Emissions Reductions as credits or offsets in any PSD, major non-attainment and/or minor NSR permit or permit proceeding occurring after the Date of Lodging with respect to the Refinery, provided that the new or modified emissions units at which credits are being used: (1) is being constructed or modified for purposes of compliance with clean fuels requirements (72 Fed. Reg. 8428, amending 40 C.F.R. Part 80); and (2) has a federally enforceable, non-Title V permit that reflects the following requirements that are applicable to the pollutants for which credits are being used:

a. For heaters and boilers, a limit of 0.027 lbs. NO_x per million BTU on a 3-hour rolling average basis;

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

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

d. For FCCUs, a limit of 20 ppmvd NO_x or less on a 365-day rolling average basis corrected to 0% O_2;

e. For FCCUs, a limit of 25 ppmvd SO_2 or less on a 365-day rolling average basis corrected to 0% O_2;

f. For FCCUs, a limit of 0.5 pounds of PM per 1,000 pounds of coke burned on a 3-hour average basis; and

g. For SRPs, NSPS Subpart J limits.

130. Conditions Precedent to Utilizing Exception to General Prohibition. Utilization of the exception set forth in Paragraph 129 to the general prohibition against the generation or

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utilization of CD Emissions Reductions set forth in Paragraph 128 is subject to the following conditions:

a. Under no circumstances shall HOVENSA use CD Emissions Reductions for netting and/or offsets prior to the time that actual CD Emissions Reductions have occurred;

b. CD Emissions Reductions may be used only at the HOVENSA Refinery;

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

d. HOVENSA shall remain subject to all federal, territorial, and local regulations applicable to the PSD, major non-attainment and/or minor NSR permitting process.

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

a. Use or generate netting reductions or emission offset credits from refinery units that are covered by this Consent Decree to represent the difference between the emissions limitations set forth in or established pursuant to this Consent Decree for such refinery units and the more stringent emissions limitations that HOVENSA 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 (a) includes both the installation of

controls under this Consent Decree and other construction and (b) is permitted as a single project triggers major New Source Review requirements;

d. Use CD Emission Reductions for HOVENSA'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 HOVENSA; provided, however, that HOVENSA shall not be allowed to trade or sell any CD Emissions Reductions; or

e. Use or generate netting reductions or emission offset credits for heaters, boilers, Generating Turbines and Compressor Engines on which Qualifying Controls, as defined in Paragraph 23, have been installed, provided that such reductions are not included in HOVENSA's demonstration of compliance with the requirements of Paragraphs 24, 26, 27 and 28.

VIII. ADDITIONAL INJUNCTIVE RELIEF

A. Delayed Coker Unit

132. Delayed Coker Unit Steam Vents Control Technology.

a. Interim Coker Steam Vents Limit. By no later than the Date of Entry, HOVENSA shall comply with a depressurization level of 10 psig for the Coker Steam Vents.

b. Final Coker Steam Vents Limit. By no later than December 31, 2012, HOVENSA shall comply with a depressurization level of 2 psig for the Coker Steam Vents.

133. HOVENSA shall comply with the additional limits and requirements described in Appendix H ("Additional Coker Project Injunctive Relief") in accordance with the compliance schedule set forth in Appendix H.

134. HOVENSA has tested and determined the VOC emissions from the coke cutting tank. HOVENSA provided EPA with a copy of the test protocol on September 29, 2009 and conducted the testing from December 8, 2009 through December 12, 2009. HOVENSA reported the results to EPA and the VIDPNR on March 1, 2010.

B. NSPS Applicability: Boilers and Generating Turbines.

135. As of the Date of Entry, Boilers 5, 8, and 9 are "affected facilities" as that term is used in 40 C.F.R. Part 60, NSPS Subparts A and D and by no later than July 31, 2012, shall be subject to and required to comply with the requirements of NSPS Subparts A and D. If HOVENSA elects to replace Boiler 5, the deadline for compliance with Subparts A and D for Boiler 5 shall be no later than December 31, 2015. HOVENSA shall notify EPA and VIDPNR by no later than July 31, 2012 if HOVENSA elects to replace Boiler 5.

136. Generating Turbines 1 through 9 are "affected facilities" as that term is used in 40 C.F.R. Part 60, Subparts A and GG. By no later than five (5) years from Date of Entry, Generating Turbines 1 through 8 shall be subject to and comply with the requirements of NSPS Subparts A and GG. As of Date of Entry, Generating Turbine 9 shall be subject to and comply with the requirements of NSPS Subparts A and GG.

IX. TERRITORIAL SUPPLEMENTAL ENVIRONMENTAL PROJECT

A. Territorial Supplemental Environmental Project

137. Virgin Islands Territorial SEP.

a. HOVENSA shall undertake a SEP designed to benefit the U.S. Virgin Islands (the "Virgin Islands Territorial SEP"), as provided in this Part.

b. Virgin Islands Territorial SEP Fund. HOVENSA shall provide funding to support one or more supplemental environmental projects to be implemented for the benefit of

the Virgin Islands. Within 120 Days of the Date of Entry, HOVENSA shall deposit no less than $4,875,000 into an escrow account established by HOVENSA for the purpose of implementing this SEP. Projects to be funded by the Virgin Islands Territorial SEP Fund are to be determined jointly by HOVENSA and the Virgin Islands, in consultation with EPA and in consideration of the environmental, public health, pollution prevention or reduction, or other benefits consistent with the objectives of the environmental protection laws of the United States.

c. Not later than ninety (90) Days prior to any request by the Virgin Islands for disbursement of funds pursuant to this Paragraph, the Virgin Islands (after consultation with EPA and HOVENSA) shall submit for review and comment by EPA and HOVENSA a written description of the project(s) to be funded, the purpose and anticipated environmental benefits of the project(s), the recipient(s) of the funding, and any other necessary and relevant information describing the project(s) to be funded. Following consultation, review and comment, the written description of the project(s) will be revised as needed by the Virgin Islands to reflect EPA's and HOVENSA's comments.

d. Upon written project approval by HOVENSA and the Virgin Islands, and within thirty (30) Days of the written request of the Virgin Islands, HOVENSA shall disburse such funds, as directed by the Virgin Islands for the purpose of implementing the project(s). Such funds disbursed pursuant to this Paragraph shall only be used for project(s) approved as provided in this Paragraph. Seven (7) Days prior to any such disbursement, HOVENSA shall notify the Parties pursuant to Paragraph 225 (Notice) of such intended disbursement.

138. In the event HOVENSA does not disburse the full amount of the escrow account including interest as required by Subparagraph 137.b on the project(s), HOVENSA shall pay as a penalty an amount equal to the difference between the amount disbursed for the project(s)

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demonstrated in the certified cost report required by Paragraph 140, and the amount required by Subparagraph 137.b. This stipulated penalty shall be paid to the Virgin Islands as provided in Subparagraph 146.b.

139. By signing this Consent Decree, HOVENSA certifies that it is not required, and has no liability under any federal or territorial law or regulation or pursuant to any agreements or orders of any court, to undertake or develop the SEP. HOVENSA 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 SEP; (ii) credit for any emissions reductions resulting from the SEP in any federal or territorial emissions trading or early reduction program; or (iii) a deduction from any federal or territorial tax based on its participation in, performance of, or incurrence of costs related to the SEP.

140. HOVENSA will include in each semi-annual report required by Paragraph 143 a progress report for the period during which the SEP is being implemented. In addition, for the semi-annual period in which the SEP is completed, the semi-annual report required by Part X (Reporting and Recordkeeping), will be a report detailing disbursements from the VI Territorial SEP Fund, certified as accurate by a responsible HOVENSA official.

B. Additional Work

140A. VIWAPA Emissions Monitoring Assistance. HOVENSA shall assist the Virgin Islands Water and Power Authority (VIWAPA) with respect to certain air emissions monitoring, as provided in this Paragraph.

a. By no later than 180 Days of the Date of Entry, HOVENSA shall submit for EPA approval a Statement of Work (SOW) detailing technical and other assistance and

support to be provided by HOVENSA to VIWAPA for the operation and maintenance of opacity, NOx and CO continuous emissions monitoring systems (CEMS) at the VIWAPA facilities located at Estate Richmond, St. Croix, and Krum Bay, St. Thomas, U.S. Virgin Islands.

b. The assistance and support to be provided are intended to support VIWAPA's capacity to properly operate and maintain CEMS at its facility. Such support may include periodic technical and other training of VIWAPA employees, provision of manuals or similar materials, or consultation on request, concerning CEMS operation and maintenance, and such other support and assistance as HOVENSA and VIWAPA agree may be necessary and appropriate for the completion of the VIWAPA Emissions Monitoring Assistance. HOVENSA may use contractors and/or contractor support for the VIWAPA Emissions Monitoring Assistance. HOVENSA shall not itself perform, participate (physically or otherwise) in performing, or assume responsibility for, any work, tasks, or functions that VIWAPA is legally obligated to perform or performs in the ordinary course of its business.

c. HOVENSA shall consult with VIWAPA (and may consult with EPA) in its development of the SOW.

d. The SOW shall include, but need not be limited to, a detailed description of the technical and other assistance and support to be provided to VIWAPA, a schedule for implementation and an estimate of the costs.

e. The support to be provided by HOVENSA shall be provided for not less than one (1) year but not more than five (5) years, such period to commence upon a date agreed to by HOVENSA and VIWAPA, provided that the SOW has been approved by EPA, and after VIWAPA has installed the CEMS. In no event shall such support be required to be provided by HOVENSA after the termination of this Consent Decree. In the event VIWAPA has not

installed the CEMS and requested that the support commence within five (5) years of the Date of Entry, HOVENSA shall not be required to provide support services to VIWAPA pursuant to this Paragraph.

f. HOVENSA shall not be required to spend more than $500,000 in the execution of the VIWAPA Emissions Monitoring Assistance required by this Paragraph.

g. HOVENSA shall promptly report to EPA any impediments or difficulties that may delay the development or execution of the VIWAPA Emissions Monitoring Assistance. In such circumstances EPA may thereafter agree with HOVENSA, for good cause shown, to modify or otherwise revise the terms of the VIWAPA Emissions Monitoring Assistance's SOW.

h. HOVENSA will include in each semi-annual report required by Paragraph 143 a progress report for the period during which the VIWAPA Emissions Monitoring Assistance is being developed and implemented. In addition, for the semi-annual period in which the VIWAPA Emissions Monitoring Assistance is completed, the semi-annual report required by Part X (Reporting and Recordkeeping), will contain (i) a detailed description of the VIWAPA Emissions Monitoring Assistance as implemented, including expenditures, certified as accurate by a responsible company official; (ii) a brief description of any significant problems encountered, and solutions for such problems; and (iii) a certification that HOVENSA has completed its obligations for the VIWAPA Emissions Monitoring Assistance as required by this Consent Decree.

i. HOVENSA shall provide a copy of the applicable provisions of the VIWAPA Emissions Monitoring Assistance SOW to each consulting or contracting firm that is retained to perform work required by this Paragraph. This requirement shall apply in lieu of the

requirement in Paragraph 8 to provide a copy of relevant portions of this Consent Decree to any contractor retained by HOVENSA to perform work required by this Consent Decree.

C. Public Statements.

141. HOVENSA agrees that in any public statements regarding the Territorial Supplemental Environmental Project(s) and the VIWAPA Emissions Monitoring Assistance required under this Part, HOVENSA must clearly indicate that these are being undertaken as part of the settlement of an enforcement action for alleged violations of the Clean Air Act and corollary Virgin Island laws and/or regulations. However, it is expressly understood by the parties that the costs to implement the VIWAPA Emissions Monitoring Assistance is not a fine or a penalty and does not reduce any fine or penalty imposed by this Consent Decree.

X. REPORTING AND RECORDKEEPING

142. HOVENSA 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.

143. Beginning thirty (30) Days after the end of the first semi-annual period after the Date of Entry and semi-annually thereafter on January 31 and July 31 until termination of this Consent Decree, HOVENSA will submit to EPA and VIDPNR a progress report. The reports will contain the following information:

a. General. Each report will contain:

i. A progress report on the implementation of the requirements of Part V (Affirmative Relief/Environmental Projects);

ii. A summary of the emissions data that is specifically required by the reporting requirements of Part V (Affirmative Relief/Environmental Projects) for the period covered by the report;

iii. A description of any problems anticipated with respect to meeting the requirements of Part V (Affirmative Relief/Environmental Projects);

iv. A description of the status of the SEP being conducted under Part IX (Territorial Supplemental Environmental Project); and

v. Any such additional matters as HOVENSA believes should be brought to the attention of EPA and VIDPNR.

b. Emissions Data. In the semi-annual report required to be submitted on July 31 of each year, HOVENSA 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 as a sum for all heaters and boilers greater than 40 mmBTU/hr maximum fired duty listed in Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines");

ii. NO_x, SO_2, CO and PM emissions in tons per year for the Generating Turbines listed in Appendix A ("List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines and Compressor Engines");

iii. SO_2 and TRS emissions in tons per year for each sulfur recovery plant;

iv. SO_2 emissions in tons per year from all Acid Gas Flaring and Tail Gas Incidents, by flare;

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v. 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 HOVENSA's annual emissions summary required under 12 VIRR Section 206-93 and are not identified in (i) through (vi) of this Paragraph; and

vi. The basis for each estimate required in this Subparagraph (i.e., stack tests, CEMS, PEMS, etc.) and an explanation of the 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 HOVENSA, 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, HOVENSA 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

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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 Subparagraph 143.c.i in a similar or same format, the requirements of this Subparagraph 143.c.i may be satisfied by attaching a copy of such report.

ii. For any exceedance of an emissions limit required or established by this Consent Decree that is 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 HOVENSA has already submitted the stack test results, HOVENSA need not resubmit them, but may instead

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reference the submission in the report (*e.g.*, date, addressee, reason for submission).

144. Each report will be certified for HOVENSA by an officer of HOVENSA responsible for overseeing implementation of this Consent Decree, as follows:

> "I certify under penalty of law that this information was prepared under my direction or supervision by personnel qualified to properly gather and evaluate the information submitted. Based on my directions and after reasonable inquiry of the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete."

XI. CIVIL PENALTY

145. In satisfaction of the civil claims asserted by the United States and the Virgin Islands in the Complaint filed in this matter, by no later than thirty (30) Days after the Date of Entry, HOVENSA shall pay a civil penalty of $5,125,000 to the United States and a civil penalty of $250,000 to the Virgin Islands.

146. Payment.

a. Payment to the United States. 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 2010V00064, DOJ Case Number 90-5-2-08229/1, and the civil action case name and case number of this action in the District of the Virgin Islands. The costs of such EFT shall be the responsibility of HOVENSA. Payment shall be made in accordance with instructions provided to HOVENSA by the Financial Litigation Unit of the United States Attorney's Office for the District of the Virgin Islands. Any funds received after 11:00 a.m. (EDT) shall be credited on the next business day. HOVENSA shall provide notice of payment, referencing the USAO File Number 2010V00064, DOJ Case

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Number 90-5-2-08229/1, and the civil action case name and case number, to the United States as provided in Paragraph 225 (Notice).

b. Payment to the Virgin Islands. Payment to the Virgin Islands shall be made by certified check or checks or cashier's checks made payable to "Government of the Virgin Islands Department of Planning & Natural Resources," referencing the name and address of the party making payment, and the civil action number. HOVENSA shall send the check(s) to:

Government of the Virgin Islands
Department of Planning & Natural Resources
8100 Lindberg Bay, Ste. #1
Cyril E. King Airport, Terminal Bldg. Second Floor
St. Thomas, V.I. 00802

147. The civil penalty set forth herein, as well as any stipulated penalty incurred pursuant to Part XII (Stipulated Penalties), is a penalty within the meaning of Section 162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f), and, therefore, HOVENSA will not treat such penalty payment as tax deductible for purposes of federal or territorial law.

148. 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 will be deemed as judgment creditors for purposes of collecting any unpaid amounts of the penalty and interest pursuant to this Part, or any stipulated penalty owed pursuant to Part XII (Stipulated Penalties).

XII. STIPULATED PENALTIES

149. Except as otherwise provided in Paragraph 138 (Territorial Supplemental Environmental Project), HOVENSA shall pay stipulated penalties as provided in this Part to the

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United States for each failure by HOVENSA to comply with the terms of this Consent Decree. Stipulated penalties shall be calculated in the amounts specified in this Part. For those provisions where a stipulated penalty of either a fixed amount or 1.2 times the economic benefit of delayed compliance is available, the decision of which alternative to seek shall rest exclusively within the discretion of the United States. Where a single event triggers more than one stipulated penalty provision, only the higher of the individual stipulated penalties shall apply.

A. Requirements for NO_x Emissions Reductions from the FCCU

150. [Reserved]

151. For each failure to meet the FCCU NO_x limit set forth in Paragraph 11: $750 for each day that the specified 7-day rolling average exceeds the applicable limit; and $2,500 for each day that the specified 365-day rolling average exceeds the applicable limit.

B. Requirements for SO_2 Emissions Control from the FCCU

152. For failure to meet any FCCU SO_2 limit set forth in Paragraph 13: $750 for each day that the specified 7-day rolling average exceeds the applicable limit; and $2,500 for each day that the specified 365-day rolling average exceeds the applicable limit.

C. Requirements for PM Emissions Control from the FCCU

153. For failure to meet the FCCU PM limit set forth in Paragraph 15: $500 for the first day of non-compliance with the limit, and $1,500 for each day thereafter until HOVENSA demonstrates compliance.

D. Requirements for CO Emissions Control from the FCCU

154. For each failure to meet any FCCU CO limit that HOVENSA accepts pursuant to Paragraph 18 or 19 (if applicable): $750 for each day that the specified 1-hour block average

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exceeds the applicable limit; and $2,500 for each day that the specified 365-day rolling average exceeds the applicable limit.

E. Requirements Related to NSPS Applicability to FCCU Catalyst Regenerator.

155. For failure to comply with NSPS Subparts A and J (or Ja, if applicable, for CO, SO_2, or PM) limits applicable to the FCCU's catalyst regenerator, as specified in Paragraph 22, per pollutant, 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, whichever is greater.

F. Requirements for NO_x Emission Reductions from Heaters, Boilers, Generating Turbines and Compressor Engines.

156.

a. For failure to install Qualifying Controls, submit permit applications or incorporate emission limits into permits for heaters, boilers, Generating Turbines, or Compressor Engines as required by Paragraphs 24, 26, 27 or 28:

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, whichever is greater.

b. For failure to reduce NO_x emissions from heaters, boilers, Generating Turbines, or Compressor Engines, as required by Paragraphs 24, 26, 27 or 28:

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

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

c. For failure to comply with any permit requirement (contained in permits required by Paragraphs 24, 26, 27 or 28) to control NO_x emissions: $500 per unit, per day.

G. Requirements for SO_2 Emissions Reductions from Heaters, Boilers and Generating Turbines

157. For burning any fuel gas that contains H_2S in excess of the applicable requirements of NSPS Subparts A and J (or Ja, as applicable) in one or more heaters or boilers or other identified equipment listed in Appendix C ("NSPS Subpart J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)"), per event, per day:

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

158. For burning Fuel Oil in any combustion unit in violation of Paragraphs 37, 38 or 39, per unit, per day:

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

H. Requirements for Sulfur Recovery Plants

159. For failure to comply with the NSPS Subparts A and J (or Ja, as applicable) emission limits at the Sulfur Recovery Plants, as specified in Paragraphs 44 and 45, per unit, per day:

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

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Over 60 days	$3,000 or an amount equal to 1.2 times the economic benefit of non-compliance, whichever is greater

160. For failure to route or re-route all sulfur pit emissions in accordance with the requirements of Paragraph 43, per unit, per day:

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

161. For failure to develop and implement a Preventative Maintenance Operation Plan, pursuant to Paragraph 48, 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

I. Requirements for Flaring Devices

162. For failure to comply with applicable NSPS Subparts A and Ja requirements, at the flares listed on Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja") after the date on which HOVENSA has accepted NSPS applicability, as set forth in Paragraphs 49 and 50, 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

163. For failure to submit the NSPS Subparts J/Ja compliance certification as required by Paragraph 52, per Flaring Device:

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

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Beyond 60th day	$2,000

J. Requirements for Benzene Waste NESHAP Program

164. For violations of the Paragraphs identified below, the amounts defined shall apply.

a. Failure to conduct audit or compliance review and verification required by Paragraphs 79 and 82: $5,000 per month per review/audit.

b. Failure to sample as required by Paragraph 88: $2,500 per week, per stream or $15,000 per quarter, per stream (whichever amount is greater, but not to exceed $75,000 per quarter).

c. Failure to install carbon canister as required by Paragraph 81: $1,000 per day per canister.

d. Failure to replace carbon canister as required by Paragraph 81: $1,000 per day per canister.

e. Failure to perform monitoring as required by Paragraph 81: $500 per monitoring event.

f. Failure to provide the training as required by Paragraph 84: $10,000 per quarter.

g. If it is discovered by an EPA or territorial investigator or inspector, or their agent, that HOVENSA failed to include all benzene waste streams in its TAB, in accordance with Paragraph 79, 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

h. Failure to monitor API separators as specified in Paragraph 93: $100 per missed monitoring location.

i. Failure to monitor API separators quarterly if the leak rate exceeds one (1) percent, as specified in Subparagraph 93.a.iii.(2): $10,000 per separator.

K. Requirements for Leak Detection and Repair Program

165. Requirements for Leak Detection and Repair Program (Section V.R):

a. Failure to have the written LDAR program as required by Paragraph 103: $3,500 per week.

b. Failure to provide the training required by Paragraph 105: $10,000 per quarter.

c. Failure to implement the requirements of Paragraph 106 (Audits): $5,000 per month per audit.

d. Failure to implement the requirements of Paragraph 109 (Leak Definitions): $100 per component, up to $10,000 per month per process unit.

e. Failure to implement the requirements of Paragraph 112 (Valve Preventative Maintenance Program):

i. For failure to perform and record external valve or stuffing box surveys according to Paragraph 112: $300 per survey.

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ii. For failure to install new or replacement valves with packing and/or valve technology and record information as required under Subparagraph 112.c: $300 per valve.

iii. For failure to repack/replace to the extent required by Subparagraph 112.b, and record relevant information on valves which leaked above applicable leak definitions, and which were determined to be in poor condition according to the external valve survey (if performed) under Subparagraph 112.a: $1200.

iv. For failure to repack/replace as required by Subparagraph 112.b, and record required information on valves which leaked above applicable leak definitions, and which were determined to be in good condition according to the external valve survey performed under Subparagraph 112.a: $1000.

v. For failure to repack/replace as required by Subparagraph 112.b, and record required information on valves which have not leaked above applicable leak definitions, and which were determined to be in poor condition according to the external valve survey (if performed) under Subparagraph 112.a: $800.

vi. For failure to repack/replace as required by Paragraph 112.b, and record required information on valves which have not leaked above applicable leak definitions, and which were determined to be in good condition according to the external valve survey performed under Subparagraph 112.a: $600. This provision shall only apply to a valve which has leaked above 100 ppm during the last monitoring period prior to the turnaround.

f. Failure to implement the requirements under Subparagraphs 113.a and 113.b (LDAR Monitoring Frequency): $100 per component, up to $10,000 per month per process unit.

g. Failure to implement the requirements under Paragraphs 114 and 115 (Electronic Storage of LDAR Data/Electronic Monitoring and Reporting of the LDAR Data): $5,000 per month per process unit.

h. Failure to implement the requirements under Paragraph 117 (LDAR Personnel): $3,750 per week.

i. Failure to implement the requirements under Paragraph 116 (QA/QC of LDAR Data): $1,000 per event.

j. Failure to implement the requirements under Paragraphs 119 and 120 (Calibration/Calibration Drift Assessment): $100 per missed event per day.

k. Failure to implement the requirements under Paragraph 121 (Extended Maintenance and Delay of Repair): Subparagraph 121.a: $1000 per component; Subparagraph 121.b: $2500 per component; Subparagraph 121.c: $5,000 per component.

l. If, after the initial audit required under Subparagraph 106.a., an EPA or territorial investigator or inspector, or their agent, discovers that HOVENSA failed to include a component in the LDAR program for monitoring within 120 Days of documented date of installation: $1500 per component.

m. If, after the initial audit required under Subparagraph 106.a, HOVENSA discovers that it failed to include a component in the LDAR program for monitoring within 120 Days of documented date of installation: $175 per component.

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n. Failure to correctly perform EPA Test Method 21 (or the alternate leak detection method pursuant to Paragraph 104), as indicated by the leak percentage ratio determined through comparative monitoring and calculated as described in Paragraph 107, provided the auditor identified at least three (3) leaking valves in the process unit:

Ratio process unit valve leak percentage to average valve leak percentage reported for process unit (Paragraph 107)	Stipulated Penalty for 4-monitoring periods, per process unit
3.0	$15,000
4.0	$30,000
5.0	$45,000
6.0 or greater	$60,000

o. For failure to comply with Paragraph 102:

Period of Delay	Penalty per Day
1st day through 30th day after deadline	$50
31st day through 60th day after deadline	$500
Beyond 60th day after deadline	$1,000

p. Failure to comply with the requirements of 40 C.F.R. Part 60, Subpart GGG, as required in Paragraph 101 within three (3) years after the Date of Lodging:

Period of Non-Compliance	Penalty per day
1st through 30th day	$625
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.

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

166. For each failure to submit an application as required by Paragraphs 124, 125 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

M. Requirements Related to Territorial Supplemental Environmental Project

167. For failure to comply with any requirement for the Supplemental Environmental Project under Part IX (Territorial Supplemental Environmental Project), per requirement, per day:

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

Such stipulated penalties shall be paid to the Virgin Islands.

N. Requirements for Monitoring, Reporting and Recordkeeping

168. For failure to install, certify, calibrate, maintain and/or operate a CEMS or PEMS, as required by Paragraphs 12, 14, 21, 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

169. For failure to conduct PM testing or comply with performance testing required by Paragraph 16:

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

170. For failure to comply with NSPS Subparts A and J monitoring requirements at the Sulfur Recovery Plants, as specified in Paragraphs 44 and 45, 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

171. For failure to submit reports as required by Part X (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

172. 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

O. Requirements to Pay Civil Penalty

173. For failure to make any civil penalty payment required by Part XI (Civil Penalty) HOVENSA 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).

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P. Requirement to Pay Stipulated Penalties

174. For failure to pay or escrow stipulated penalties as required by Paragraphs 176 and 177: $2,500 per day, per penalty, plus interest on the amount overdue at the rate specified in 28 U.S.C. § 1961(a).

Q. Requirements for Coker

175. For failure to comply with the interim depressurization level for the Coker, as specified in Subparagraph 132.a, or when applicable the final depressurization level, as specified in Subparagraph 132.b, 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, whichever is greater

R. General Provisions Related to Stipulated Penalties

176. Payment of Stipulated Penalties. Stipulated penalties under this Part 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. HOVENSA shall pay stipulated penalties upon written demand by the United States (or by the Virgin Islands pursuant to Paragraph 167) no later than sixty (60) Days after HOVENSA receives such demand. Stipulated Penalties shall be paid to the United States or the Virgin Islands (as applicable) in the manner set forth in Part XI (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 calculation method underlying the demand, and the grounds upon which the demand is based.

The United States may, in its unreviewable discretion, waive payment of all or any portion of stipulated penalties that may accrue under this Consent Decree.

177. Stipulated Penalty Dispute. Should HOVENSA dispute the United States' or the Virgin Islands' demand for all or part of a stipulated penalty, it may avoid the imposition of a stipulated penalty for failure to pay a stipulated penalty under Paragraph 176 by placing the disputed amount demanded in a commercial escrow account pending resolution of the matter and by invoking the dispute resolution provisions of Part XVI (Retention of Jurisdiction/Dispute Resolution) within the time provided in Paragraph 176 for payment of stipulated penalties. If the dispute is thereafter resolved in HOVENSA's favor, the escrowed amount plus accrued interest shall be returned to HOVENSA; otherwise, EPA shall be entitled to the amount that was determined to be due by the Court, plus the interest that has accrued in the escrow account on such amount. The United States and the Virgin Islands reserve the right to pursue any other non-monetary remedies to which they are legally entitled, including, but not limited to, injunctive relief for HOVENSA's violations of this Consent Decree.

178. Where a violation of this Consent Decree is also a violation of the Clean Air Act, its regulations, or a federally-enforceable Territorial law, regulation, or permit, the United States will not seek civil penalties where it already has demanded and secured stipulated penalties from HOVENSA for the same violations nor will the United States demand stipulated penalties from HOVENSA for a Consent Decree violation if the United States has commenced litigation under the Clean Air Act for the same violations. Where a violation of this Consent Decree is also a violation of Territorial law, regulation, or a permit, VIDPNR will not seek civil penalties where it already has demanded and secured stipulated penalties from HOVENSA for the same

violations, nor will VIDPNR demand stipulated penalties from HOVENSA for a Consent Decree violation if VIDPNR has commenced litigation under the Clean Air Act for the same violations.

XIII. INTEREST

179. HOVENSA shall be liable for interest on the unpaid balance of the civil penalty specified in Part XI (Civil Penalty), and/or interest on any unpaid balance of stipulated penalties to be paid in accordance with Part XII (Stipulated Penalties). 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. 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 177 (Stipulated Penalties Dispute).

XIV. RIGHT OF ENTRY

180. Any authorized representative of EPA or VIDPNR, upon presentation of credentials, shall have a right of entry upon the premises of the facilities of the Refinery 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 HOVENSA pursuant to this Consent Decree or deemed necessary by EPA or VIDPNR to verify compliance with the Decree. Except where other time periods are specifically noted in this Consent Decree, HOVENSA shall retain such records for the period of this Consent Decree. Nothing in this Consent Decree shall limit the authority of EPA or

VIDPNR to conduct tests, inspections, or other activities under any statutory or regulatory authority.

XV. FORCE MAJEURE

181. 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 HOVENSA, or any contractor or other entity controlled by HOVENSA, that delays compliance with any provision of this Consent Decree or causes a violation of any provision of this Consent Decree despite HOVENSA'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 all reasonable efforts 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. "Force Majeure" does not include HOVENSA's financial inability to perform any obligation under this Consent Decree.

182. Notice of Force Majeure Events. If any event occurs or fails to occur that may delay compliance with or otherwise cause a violation of any obligation under this Consent Decree, as to which HOVENSA intends to assert a claim of Force Majeure, HOVENSA shall notify the United States and VIDPNR in writing as soon as practicable, but in no event later than twenty (20) business days following the date HOVENSA first knew, or by the exercise of due diligence should have known, that the event caused or may cause such delay or violation. If HOVENSA learns subsequent to its execution of the Consent Decree that impacts associated with the more stringent NO_2 or SO_2 NAAQS or PM-2.5 memorandum will or may cause delay or violation of any obligation under the Consent Decree, to which HOVENSA intends to assert a claim of Force Majeure, HOVENSA shall notify the United States and VIDPNR in writing, by the later of the two following dates: (1) within ten (10) business days of the Date of Entry; or (2)

within ten (10) business days of the date when HOVENSA first knew or should have known by the exercise of due diligence that the relevant impact associated with the more stringent NO_2 or SO_2 NAAQS or PM-2.5 memorandum will or may cause delay or impediment to performance in compliance with any provision of the Consent Decree. In any notice provided pursuant to either of the preceding two sentences, HOVENSA 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 HOVENSA to prevent or minimize the delay or violation, the schedule by which HOVENSA proposes to implement those measures, and HOVENSA's rationale for attributing a delay or violation to a Force Majeure Event. HOVENSA shall adopt all reasonable measures to avoid or minimize such delays or violations. HOVENSA shall be deemed to know of any circumstance of which HOVENSA, or any contractor or other entity controlled by HOVENSA, knew or should have known.

183. Failure to Give Notice. If HOVENSA materially fails to comply with the notice requirements of this Part, the United States may void HOVENSA's claim for Force Majeure as to the specific event for which HOVENSA has failed to comply with such notice requirement.

184. Plaintiffs' Response. The United States, after an opportunity to consult with the Virgin Islands, shall notify HOVENSA in writing regarding its claim of Force Majeure as soon as reasonably practicable. If the United States agrees that the delay in performance has been or will be caused by a Force Majeure Event, the United States and HOVENSA shall stipulate to an extension of deadlines(s) for performance of the affected Consent Decree requirement(s) by a period equal to the delay actually caused by the event (taking into account additional work HOVENSA may be required to perform due to the more stringent NO_2 or SO_2 NAAQS or PM-2.5 memorandum), or to the extent to which HOVENSA may be relieved of stipulated penalties

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or other remedies provided under the terms of this Consent Decree. Such agreement shall be reduced to writing, and signed by the Parties. If the agreement results in a material change to the terms of this Consent Decree, an appropriate modification shall be made pursuant to Paragraph 228 (Modification). If such change is not material, no modification of this Consent Decree shall be required.

185. Disagreement. If the United States does not accept HOVENSA's claim of Force Majeure, or if the Parties 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 Part XVI (Retention of Jurisdiction/Dispute Resolution).

186. Burden of Proof. In any dispute regarding Force Majeure, HOVENSA 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. HOVENSA shall also bear the burden of proving that it 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 does not necessarily, result in an extension of a subsequent compliance date.

187. Events Excluded. Unanticipated or increased costs or expenses associated with the performance of HOVENSA's obligations under this Consent Decree shall not constitute a Force Majeure Event.

188. Potential Force Majeure Events. Provided HOVENSA satisfied all requirements in Paragraphs 181 to 186 and other than as provided in Paragraph 187, the Parties agree that the kinds of events listed below are among those that could qualify as Force Majeure within the

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meaning of this Part: construction, labor, or equipment delays; Malfunction of an emissions 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 HOVENSA'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 HOVENSA and HOVENSA has taken all steps available to it to obtain the necessary permit, including, but not limited to: submitting a complete permit application; responding to requests for additional information by the permitting authority in a timely fashion; and accepting lawful permit terms and conditions after exhausting any legal rights to appeal terms and conditions imposed by the permitting authority.

189. As part of the resolution of any matter submitted to this Court under Part XVI (Retention of Jurisdiction/Dispute Resolution) regarding a claim of Force Majeure, the Parties (by agreement), or the Court (by order), may in appropriate circumstances only extend 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 delay agreed to by the Parties or approved by the Court. HOVENSA shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule (provided that HOVENSA shall not be precluded from making a further claim of Force Majeure with regard to meeting any such extended or modified schedule).

XVI. RETENTION OF JURISDICTION/DISPUTE RESOLUTION

190. 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 the United States, the Virgin Islands and HOVENSA that may arise under the provisions of this Consent Decree until the Decree terminates in accordance with Part XIX (Termination).

191. The dispute resolution procedure set forth in this Part 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.

192. The dispute resolution procedure required herein shall be invoked by one Party giving to the other written notice of a dispute pursuant to this Part. The notice shall describe the nature of the dispute, and shall state the noticing Party's position with regard to such dispute. The Party receiving such a notice shall acknowledge receipt of the notice and the Parties shall expeditiously schedule a meeting to discuss the dispute informally no later than thirty (30) Days from the receipt of such notice.

193. 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 ninety (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.

194. In the event that the Parties are unable to reach agreement during the informal negotiation period pursuant to Paragraph 193, the United States or the Virgin Islands, as applicable, shall provide HOVENSA with a written summary of its position regarding the dispute. The position advanced by the United States or the Virgin Islands, as applicable, shall be considered binding unless, within forty-five (45) Days of HOVENSA's receipt of the written summary of the United States' or the Virgin Islands' position, HOVENSA files with the Court a petition that describes the nature of the dispute. The United States or the Virgin Islands shall

respond to the petition within sixty (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.

195. In the event that the United States and the Virgin Islands make differing determinations or take differing action that affect HOVENSA's rights or obligations under this Consent Decree, the final decision of the United States shall take precedence.

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

197. The Parties do not intend that the invocation of this Part by a Party cause the Court to draw any inferences or establish any presumptions adverse to either Party.

198. As part of the resolution of any dispute under this Part, 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. HOVENSA shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XVII. EFFECT OF SETTLEMENT

199. Definitions. For purposes of this Part, the following definitions apply:

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

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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 SIP and related rules adopted as required by 40 C.F.R. §§ 51.165 and 51.166;

ii. Any Title V regulations that implement, adopt, or incorporate the specific regulatory requirements identified above; any applicable federally-enforceable territorial regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified above; any Title V permit provisions that implement, adopt, or incorporate the specific regulatory requirements identified above; and

iii. Any applicable territorial laws or regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified above 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. This term shall also include the requirements of 12 VIRR Section 204-45, "Standards of Performance for Sulfur Recovery Units at Petroleum Refineries."**

c. **"Applicable NSPS Subparts A and Ja Requirements" shall mean the standards, monitoring, testing, reporting, and recordkeeping requirements found at 40 C.F.R.**

§ 60.100a through 60.109a (Subpart Ja) 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 Ja.

d. "Applicable NSPS Subparts A and D Requirements" shall mean the standards, monitoring, testing, reporting, and recordkeeping requirements found at 40 C.F.R. §§ 60.40 through 60.46 (Subpart D) 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 D.

e. "Applicable NSPS Subparts A and GG Requirements" shall mean the standards, monitoring, testing, reporting, and recordkeeping requirements found at 40 C.F.R. §§ 60.330 through 60.335 (Subpart GG) 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 GG.

f. "Applicable NSPS Subparts A and QQQ Requirements" shall mean the standards, monitoring, testing, reporting, and recordkeeping requirements found at 40 C.F.R. §§ 60.590 through 60.593 (Subpart QQQ) 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 QQQ.

g. "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 territorial regulations that implement, adopt or incorporate the Benzene Waste NESHAP.

h. "Delayed Coker Unit Project" or "Coker Project" shall be the equipment that was newly constructed or modified between August 19, 1999 and May 8, 2002 as follows: Coker Unit process equipment and associated gas plant, process heaters, H-8501 and H-8502, Boiler No. 10, No. 7 Amine, No. 6 Sour Water Stripper, sour water tank, pitch storage tank, desalter effluent water tank, coke cutting water tank, coke pit, Nos. 1 and 2 Sulfur Recovery Plants and associated No. 1 Beavon, the process equipment located in the No. 5 Crude, No. 3 Vacuum, No. 3 Crude, No. 1 Vacuum, No. 1 Visbreaker, and Numbers. 2, 4, 6, and 7 Distillate Desulfurizing Units, and outside battery limit modifications to the terminal, tank farm and blending equipment.

i. "FCCU" shall include the riser, reactor, regenerator, air blower, spent catalyst stripper, catalyst recovery equipment, regenerator equipment for controlling air pollutant emissions, flue gas cooler, and the fractionator, its overhead condenser and associated wet gas compressor.

j. "HOVENSA" shall include HOVENSA L.L.C. and its predecessors in interest, except with respect to Paragraph 206.

k. "LDAR Requirements" shall mean the requirements relating to equipment in light liquid service and 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 territorial regulations or State Implementation Plan requirements that implement, adopt or incorporate those federal regulations or set similar standards.

l. "Post-Lodging Compliance Dates" shall mean any dates in this Part after the Date of Lodging. Post-Lodging Compliance Dates include dates certain (e.g., "December 31, 2007"), dates after Lodging represented in terms of "months after Lodging"

(e.g., "12 months after the Date of Lodging"), and dates after Lodging represented by actions taken (e.g., "Date of Certification"). The Post-Lodging Compliance Dates represent the dates by which work is required to be completed or an emission limit is required to be met under the applicable provisions of this Consent Decree.

200. 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 HOVENSA to the United States and the Virgin Islands: (1) for violations of the Applicable NSR/PSD Requirements resulting from the construction or modification of the following units that occurred prior to the Date of Lodging, and that commenced and ceased prior to the Date of Lodging; and (2) for any violations of the Applicable NSR/PSD Requirements resulting from pre-Lodging construction or modification of the following units, that commenced prior to the Date of Lodging and continued up to the following dates:

Unit	Pollutant	Date
FCCU	NO_x	Date of Entry
	SO_2	Date of Entry
	PM	Date of Entry
Heaters, boilers, Generating Turbines,	NO_x	Eight (8) years from Date of Entry
and Compressor Engines	SO_2	Date of Entry
Coker Project	H_2S	December 31, 2012

The limits for VOC, CO, H_2S, NO_x, SO_2, PM, PM-10, PM $_{2.5}$ and TRS contained in VIDPNR Permit STX-557A-E-02 for the Coker Project were intended to limit the emissions of these pollutants for purposes of avoiding permitting pursuant to 40 C.F.R. §52.21. Section VIII.A establishes injunctive relief to resolve EPA's September 18, 2007 NOV, CAA-02-2007-1313, issued to HOVENSA. HOVENSA may seek relaxation of the emissions limits in Permit

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STX-557A-E 02 pertaining to VOC, CO, H_2S, NO_X, SO_2, PM-10, PM, PM-2.5, or TRS upon compliance with the interim limit for the Coker Steam Vents as specified in Subparagraph 132.a and with the interim limit for Beavon Unit #1 as specified in Appendix H ("Additional Coker Project Injunctive Relief"), and all other injunctive relief specified in Appendix H. Such relaxations will not be deemed to constitute a major modification to the Refinery within the meaning of 40 C.F.R. §52.21(r)(4) and the requirements of Subparagraphs (j) through (s) of 40 C.F.R. §52.21 shall not apply by virtue of such relaxations.

201. Conditional Resolution of Liability for CO Emissions Under the Applicable NSR/PSD Requirements. With respect to emissions of CO from the Refinery FCCU, if and when HOVENSA accepts an emissions limit pursuant to Paragraph 19 and demonstrates compliance using CEMS at the Refinery FCCU, then all civil liability of HOVENSA to the United States and the Virgin Islands shall be resolved for violations of the Applicable NSR/PSD Requirements relating to CO emissions at the Refinery FCCU resulting from pre-Lodging construction or modification of the Refinery FCCU that either ceased prior to the Date of Lodging or continued up to the date on which HOVENSA demonstrates compliance with such CO emissions limit.

202. Reservation of Rights Regarding Applicable NSR/PSD Requirements: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void. Notwithstanding the resolution of liability in Paragraphs 199, 200 and 201, the releases of liability by the United States and the Virgin Islands to HOVENSA for violations of the Applicable NSR/PSD Requirements during the period between the Date of Lodging and the Post Lodging Compliance Dates shall be rendered void if HOVENSA materially fails to comply with the corresponding obligations and requirements of Part V (Affirmative Relief/Environmental Projects), Sections

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V.A through V.E (relating to the FCCU), Sections V.F through V.H (relating to heaters, boilers, Generating Turbines and Compressor Engines), and Part VIII (Additional Injunctive Relief), Sections VIII.A and VIII.B (relating to the Delayed Coker Unit), provided, however, that the releases in Paragraphs 199, 200, and 201 shall not be rendered void if HOVENSA remedies such material failure and pays any stipulated penalties due as a result of such material failure.

203. Exclusions from Release Coverage Regarding Applicable NSR/PSD Requirements: Construction and/or Modification Not Covered. Notwithstanding the resolution of liability in Paragraphs 199, 200, and 201, nothing in this Consent Decree precludes the United States or the Virgin Islands from seeking injunctive relief, penalties, or other appropriate relief from HOVENSA for violations by HOVENSA 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 Consent Decree; or (ii) any construction or modification that commences after the Date of Lodging.

204. Evaluation of Applicable NSR/PSD Requirements. Increases in emissions from units covered by this Consent Decree, where the increases result from the Post-Lodging construction or modification of any units within the Refinery, are beyond the scope of the release in Paragraphs 199, 200 and 201, and HOVENSA is not relieved from any obligation to evaluate any such increases in accordance with the Applicable NSR/PSD Requirements.

205. Resolution of Liability Regarding Applicable NSPS Requirements. With respect to emissions of the following pollutants from the following units, entry of this Consent Decree shall resolve all civil liability of HOVENSA to the United States and the Virgin Islands for violations of the applicable NSPS Subparts listed below from the date that the Pre-Lodging

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claims of the United States and the Virgin Islands accrued up to the specified Post-Lodging Compliance Date:

Unit	Applicable Subpart	Pollutant	Date
FCCU	A and J	SO_2, CO, and PM	Date of Lodging
		PM (opacity monitoring requirements)	Date of AMP approval receipt (see Paragraph 22)
FCCU Turboexpander Vents	A and J	SO_2, CO, PM (opacity)	Date of Lodging
All fuel gas combustion devices listed in Appendix C ("NSPS Subpart J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)")	A, J and Ja, as applicable	SO_2	Dates listed in Appendix C ("NSPS Subpart J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)")
Flaring Devices	A, J, and Ja	SO_2	Dates listed in Appendix D ("List of Flaring Devices Subject to NSPS Subparts J/Ja")
East Side SRP	A, J and Ja	SO_2 and TRS	April 1, 2015
West Side SRP	A, J and Ja	SO_2 and TRS	December 31, 2011
Generating Turbines 1-8	A and GG	NO_x and SO_2	Five (5) years from Date of Entry
Generating Turbine 9	A and GG	NO_x and SO_2	Date of Entry
Boilers 5, 8, and 9	A and D	NO_x, SO_2, and PM	July 31, 2012 (or 12/31/2015 for Boiler 5 if replaced)
The FCCU and Coker Drain Systems	A and QQQ	VOC	June 30, 2011

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206. Reservation of Rights Regarding Applicable NSPS Requirements: Release for Violations Continuing After the Date of Lodging Can Be Rendered Void. Notwithstanding the resolution of liability in Paragraph 205, the releases of liability by the United States and the Virgin Islands to HOVENSA for violations of the applicable NSPS Subparts listed in Paragraph 205 shall be rendered void if HOVENSA fails to comply with the obligations and requirements of Parts V (Affirmative Relief/Environmental Projects), VI (Permitting) and VIII (Additional Injunctive Relief) (relating to NSPS requirements); provided, however, that the releases in Paragraph 205 shall not be rendered void if HOVENSA remedies such failure and pays any stipulated penalties due as a result of such failure.

207. Resolution of Liability for Coker Project. Entry of this Consent Decree shall resolve all civil and administrative liability, commencing with the beginning of construction of the Coker Project through completion of the injunctive relief required pursuant to Paragraphs 132 through 134, of HOVENSA to the United States and Virgin Islands for the following:

a. EPA's November 22, 2006 NOV, CAA-02-2007-1303, issued to HOVENSA for alleged violations arising under HOVENSA's Coker Operating Permit STX-557A-E-02, and HOVENSA's written notification dated January 9, 2008, to the Virgin Islands of calculated exceedances on January 2, 2008, of Coker Process Heater (B) of PM and VOC limits in the Coker Operating Permit;

b. The findings of violation in Paragraphs 49 through 55 of EPA's September 18, 2007 NOV, CAA-02-2007-1313, issued to HOVENSA, and any other violations of the permitting regulations cited in Paragraphs 49 through 55 of the NOV with respect to the Coker Project; and

c. EPA's March 20, 2007 Compliance Order, CAA-02-2007-1004, as amended on April 5, 2007 by Compliance Order, CAA-02-2007-1004a, arising from HOVENSA's alleged failure to provide complete responses to EPA's December 21, 2006 Information Request Letter, issued pursuant to § 114 of the Clean Air Act.

208. Resolution of Liability Regarding Benzene Waste NESHAP Requirements. Entry of this Consent Decree shall resolve all civil liability of HOVENSA to the United States and the Virgin Islands for violations of the statutory and regulatory requirements set forth below in Subparagraphs a. – c. 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 post-Lodging violations are identified by HOVENSA in its Initial Compliance Audit Report submitted pursuant to Paragraph 79 and corrected by HOVENSA as required under Paragraph 80.

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 permits or territorial regulations that implement, adopt, or incorporate the specific federal regulatory requirements identified in Subparagraph .a.

c. Any applicable territorial regulations enforceable by the Virgin Islands that implement, adopt, or incorporate the specific federal regulatory requirements identified in Subparagraph a.

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209. Resolution of Liability Regarding LDAR Requirements. Entry of this Consent Decree shall resolve all civil liability of HOVENSA to the United States and the Virgin Islands for violations of the statutory and regulatory requirements set forth below in Subparagraphs a - c. 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 post-Lodging violations are identified by HOVENSA in its Initial Compliance Audit Report submitted pursuant to Subparagraph 106.a and corrected by HOVENSA as required under Paragraph 107:

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

c. Any applicable territorial regulations or permits enforceable by the Virgin Islands that implement, adopt, or incorporate the specific regulatory requirements identified in Subparagraph a.

210. Reservation of Rights Regarding Benzene NESHAP and LDAR Requirements. Notwithstanding the resolution of liability in Paragraphs 208 and 209, nothing in this Consent Decree precludes the United States and/or the Virgin Islands from seeking from HOVENSA injunctive and/or other equitable relief or civil penalties for violations by HOVENSA of Benzene Waste NESHAP and/or LDAR requirements that (i) commenced prior to the Date of Lodging

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and continued after the Date of Lodging if HOVENSA fails to identify and address such violations as required by Paragraphs 80 and 107, or (ii) commenced after the Date of Lodging.

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

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

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

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

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

XVIII. GENERAL PROVISIONS

214. Other Laws. Except as specifically provided by this Consent Decree, nothing in this Consent Decree shall relieve HOVENSA of its obligations to comply with all otherwise applicable federal and territorial laws and regulations, including, but not limited to, more stringent standards. In addition, nothing in this Consent Decree shall be construed to prohibit or prevent the United States or the Virgin Islands 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 territorial laws and regulations. Subject to Part XVII (Effect of Settlement) and Paragraphs 149 and 216, nothing contained in this Consent Decree shall be construed to prevent or limit any power of the United States to seek or obtain other remedies or sanctions available under federal or territorial statutes or regulations by virtue of HOVENSA's violation of this Consent Decree or of the statutes and regulations upon which this Consent Decree is based, or for HOVENSA's violations of any applicable provision of law. This shall include the right of the United States or the Virgin Islands to invoke the authority of the Court to order HOVENSA's compliance with this Consent Decree in a subsequent contempt action. The requirements of this Consent Decree do not exempt

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HOVENSA from complying with any and all new or modified federal and/or territorial statutory or regulatory requirements that may require technology, equipment, monitoring, or other upgrades after the Date of Lodging.

215. Startup, Shutdown, Malfunction. Notwithstanding the provisions in this Consent Decree regarding Startup, Shutdown, and Malfunction, the Decree does not exempt HOVENSA from the requirements of territorial laws and regulations or from the requirements of any permits or plan approvals issued to HOVENSA as such laws, regulations, permits, and/or plan approvals may apply to Startups, Shutdowns, and Malfunctions at the Refinery.

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

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

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218. Changes to Law. In the event that during the life of this Consent Decree there is change in the statutes or regulations that provide the underlying basis for the Consent Decree such that HOVENSA 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, HOVENSA may petition the Court for relief from any such requirements, in accordance with Rule 60 of the Federal Rules of Civil Procedures ("F.R.Civ.P."). However, if HOVENSA 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 Part XVII (Effect of Settlement). Nothing in this Paragraph is intended to enlarge the Parties' rights under F.R.Civ.P. Rule 60, nor is this Paragraph intended to confer on any Party any independent basis, outside of F.R.Civ.P. Rule 60, for seeking such relief.

219. Alternative Monitoring Plans. Pursuant to Paragraphs 22 or 35 of this Consent Decree, HOVENSA may submit an AMP to EPA for approval. HOVENSA shall comply with the proposed AMP pending EPA's approval or disapproval of the submitted AMP. If an AMP is not approved, then within ninety (90) Days of HOVENSA's receipt of disapproval, HOVENSA will submit to EPA for approval a plan and schedule that provide for compliance with the applicable monitoring requirements as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.

220. Service of Process. HOVENSA 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 F.R.Civ.P. and any applicable local rules of this Court, including, but not limited to, service of a summons. The persons identified by

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HOVENSA in Paragraph 225 (Notice) are authorized to accept service of process with respect to all matters arising under or relating to this Consent Decree.

221. Post-Lodging, Pre-Entry Obligations. Obligations of HOVENSA 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 Virgin Islands 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.

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

223. Public Documents. All information and documents submitted by HOVENSA 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.

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

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225. 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 Part XV (Force Majeure) and Part XVI (Retention of Jurisdiction/Dispute Resolution), which shall be sent by overnight mail or by certified or registered mail, return receipt requested. Notifications to or communications mailed to HOVENSA shall be deemed to be received on the earlier of (i) actual receipt by HOVENSA or (ii) receipt of an electronic version sent to the addressees set forth in this Paragraph. Each report, study, notification, or other communication of HOVENSA 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 territorial 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. 90-5-2-1-08229/1

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

with a hard copy 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

As to EPA Region 2:

Director, Division of Enforcement and Compliance Assistance
U.S. EPA Region 2
290 Broadway, 21st Floor
New York, NY 10007-1866

Director, Caribbean Environmental Protection Division
U.S. EPA Region 2
Centro Europa Building, Suite 417
1492 Ponce De Leon Avenue
Santurce, Puerto Rico 00907-4127

As to the United States Virgin Islands:

Director, Division of Environmental Protection
Virgin Islands Department of Planning and Natural Resources
45 Mars Hill
Fredricksted, St. Croix, U.S. Virgin Islands 0084-4474

and an electronic copy, in .pdf format, to:
csullivan@matrixneworld.com
foley.patrick@epa.gov

As to HOVENSA:

HOVENSA L.L.C.
c/o Environmental Director
One Estate Hope
Christiansted, USVI 00820

and an electronic copy, in .pdf format, to:
ccolman@hess.com
Jdomike@wallaceking.com

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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.

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

227. 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.

228. 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 Consent Decree. Non-material modifications to this Consent Decree will be effective when signed by the United States and HOVENSA. 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 HOVENSA. Material modifications to this Consent Decree will be in writing, signed by the Parties, 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.

229. 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 the 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.

XIX. TERMINATION

230. Certification of Completion: Applicable Sections. Prior to moving for termination under Paragraph 234, HOVENSA may seek to certify completion of one or more of the following Sections/Parts of the Consent Decree.

a. Sections V.A through V.E - Fluid Catalytic Cracking Unit (including operation of the unit for one (1) year after completion in compliance with the emission limits established pursuant to this Consent Decree);

b. Section V.F – NO_x Emissions Reductions from Heaters, Boilers, Generating Turbines and Compressor Engines (including operation of the relevant units for one (1) year after installation of Qualifying Controls in compliance with the Consent Decree);

c. Section V.G – SO_2 Emissions Reductions from, and NSPS Applicability to Heaters, Boilers and Generating Turbines (including operation of the relevant units for one (1) year after completion in compliance with the emission limit set pursuant to the Consent Decree);

d. Section V.H – Sulfur in Fuel Restrictions for Oil Burning (including operation of the relevant units for one (1) year after completion in compliance with the emission limit set pursuant to the Consent Decree);

e. Section V.I – Sulfur Recovery Plants (including operation of the relevant units for one (1) year after completion in compliance with the emission limit set pursuant to the Consent Decree);

f. Sections V.J through V.O - Flares; (including operation of the relevant units for one (1) year after completion in compliance with the emission limit set pursuant to the Consent Decree);

g. Sections V.P through V.R – Benzene, NSPS QQQ, and LDAR;

h. Part VIII – Additional Injunctive Relief (including operation of the relevant units for one (1) year after completion in compliance with the emission limit set pursuant to the Consent Decree); and

i. Part IX – Territorial Supplemental Environmental Project.

231. Certification of Completion: HOVENSA Actions. If HOVENSA concludes that any of the Section(s) or Part(s) identified in Paragraph 230 have been completed, HOVENSA may submit a written report to EPA and VIDPNR describing the activities undertaken and certifying that the applicable Section(s) or Part(s) have been completed in full satisfaction of the requirements of this Consent Decree, and that HOVENSA 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 HOVENSA.

> "I certify under penalty of law that this information was prepared under my direction or supervision by personnel qualified to properly gather and evaluate the information submitted. Based on my directions and after reasonable inquiry of the person(s) directly responsible for gathering the information, the information

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submitted is, to the best of my knowledge and belief, true, accurate and complete."

232. Certification of Completion: EPA Actions. Upon receipt of HOVENSA's certification, EPA will notify HOVENSA 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 HOVENSA as to the activities that must be undertaken to complete the applicable Section. HOVENSA will perform all activities described in the notice, subject to its right to invoke the dispute resolution procedures set forth in Part XVI (Dispute Resolution); and/or

b. If EPA concludes that the requirements of the applicable Section or Part have been completed in accordance with this Consent Decree, EPA will so certify in writing to HOVENSA. This certification will constitute the certification of completion of the applicable Section or Part 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 HOVENSA's certification is that it is in current compliance with all such obligations.

233. Certification of Completion: No Impediment to Stipulated Penalty Demand. Nothing in Paragraphs 230 and 231 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 Subparagraph 232.b. In addition, nothing in this Paragraph will permit HOVENSA to fail to implement any ongoing obligations under the Consent Decree regardless of whether a Certification of Completion has been issued.

234. Termination: Conditions Precedent. This Consent Decree will be subject to termination upon motion by the Parties or upon motion by HOVENSA acting alone under the conditions identified in this Paragraph. Prior to seeking termination, HOVENSA 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 230 and 231;

c. Payment of all penalties and other monetary obligations due under the terms of the Consent Decree; unless all penalties and/or other monetary obligations owed to the United States or the Virgin Islands are fully paid as of the time of the motion;

d. Satisfaction of Part IX (Territorial Supplemental Environmental Project);

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

235. Termination: Procedure. At such time as HOVENSA believes that it has satisfied the requirements for termination set forth in Paragraph 234, HOVENSA will certify such compliance and completion to the United States and the Virgin Islands in accordance with the certification language of Paragraph 231. Unless either the United States or the Virgin Islands objects in writing with specific reasons within 120 days of receipt of HOVENSA's certification

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under this Paragraph, the Court may upon motion by HOVENSA order that this Consent Decree be terminated. If either the United States or the Virgin Islands objects to the certification by HOVENSA, then the matter will be submitted to the Court for resolution under Part XVI (Retention of Jurisdiction/Dispute Resolution). In such case, HOVENSA will bear the burden of proving that this Consent Decree should be terminated

XX. SIGNATORIES

236. 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 _____, 20__.

_____
VIRGIN ISLANDS DISTRICT JUDGE

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States, et al. v. HOVENSA L.L.C.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

Date: 1/16/11

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

Date: 1/19/11

MYLES E. FLINT, II
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
(202) 307-1859

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States, et al. v. HOVENSA L.L.C.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

RONALD W. SHARPE
United States Attorney
United States Virgin Islands

JOYCELYN HEWLETT
Assistant United States Attorney
United States Virgin Islands

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States, et al. v. HOVENSA L.L.C.

FOR PLAINTIFF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

Date: 1/22/11

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

Date: January 19, 2011

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

Date: 1/3/11

JOHN EOGARTY
Associate Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
Washington, D.C. 20460

Date: 1/6/11

PHILLIP BROOKS
Director, Air Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
Washington, D.C. 20460

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States, et al. v. HOVENSA L.L.C.

FOR PLAINTIFF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION 2:

Date: 1/6/11

JUDITH ENCK
Regional Administrator
United States Environmental Protection Agency
Region 2
290 Broadway
New York, New York 10007-1866

Date: 1/6/11

KARA MURPHY
Assistant Regional Counsel
United States Environmental Protection Agency
Region 2
290 Broadway
New York, New York 10007-1866

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States, et al v. HOVENSA L.L.C.

FOR PLAINTIFF THE UNITED STATES VIRGIN ISLANDS:

Date: 1-14-2011

CARMELO RIVERA
Acting Commissioner
Government of the US Virgin Islands
Department of Planning & Natural Resources
Cyril E. King Airport,
Terminal Building, 2nd floor
St. Thomas, US Virgin Islands 00802

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States, et al v. HOVENSA L.L.C.

FOR DEFENDANT HOVENSA L.L.C.:

Date: 04Jan11

JOHN W. GEORGE
Acting President and Chief Operating Officer

03Jan11

APPENDIX A
List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines, and Compressor Engines

Source Code	Unit	Unit Size	2004		2005		Emissions Factor	
		(mmBtu/hr)	(lb/mmBtu)	(tons/yr)	(lb/mmBtu)	(tons/yr)	Basis	Time Period
H-101	1 Vis.	133.6	0.224	81.2	0.224	87.6	Stack Test	3 by 1-hr
H-104	1 Vis.	99.4	0.179	48.3	0.179	52.1	Stack Test	3 by 1-hr
H-160	Utl. Fract.	112.5	0.275	37.0	0.275	71.9	AP-42 Tbl 1.4-1	
H-200	Penex	41.1	0.191	20.2	0.191	14.7	Stack Test	3 by 1-hr
H-201	Penex	42.6	0.150	16.4	0.150	11.9	Stack Test	3 by 1-hr
H-202	Penex	68.4	0.098	17.2	0.098	12.5	AP-42 Tbl 1.4-1	
H-401A	2 CDU	150.7	0.196	109.8	0.196	90.6	Stack Test	3 by 1-hr
H-401B	2 CDU	150.7	0.170	95.2	0.170	78.6	Stack Test	3 by 1-hr
H-401C	2 CDU	150.7	0.349	195.7	0.334	154.4	AP-42 Tbls 1.3-1/1.4-1*	
H-600	2 Plat.	48.1	0.098	8.1	0.098	5.3	AP-42 Tbl 1.4-1	
H-602	2 Plat.	261.9	0.185	83.5	0.185	54.7	Stack Test	3 by 1-hr
H-603	2 Plat.	72.0	0.185	23.0	0.185	15.0		
H-606	2 Plat.	49.2	0.098	8.3	0.098	5.4	AP-42 Tbl 1.4-1	
H-801	2 DD	79.0	0.095	19.4	0.095	15.6	Stack Test	3 by 1-hr
H-1401A	3 CDU	208.6	0.144	116.7	0.144	86.9	Stack Test	3 by 1-hr
H-1401B	1 Vac.	188.2	0.178	130.1	0.178	96.9	Stack Test	3 by 1-hr
H-1500	3 DD	50.8	0.098	11.3	0.098	8.8	AP-42 Tbl 1.4-1	
H-1501	3 DD	53.5	0.098	11.9	0.098	9.2	AP-42 Tbl 1.4-1	
H-2101	2 Vac.	190.6	0.328	157.1	0.319	116.3	AP-42 Tbls 1.3-1/1.4-1*	
H-2102	2 Vac.	184.6	0.328	152.2	0.319	112.6	AP-42 Tbls 1.3-1/1.4-1*	
H-2185	2 Vis.	250	0.162	71.9	0.162	71.7	CEM	Annual
H-2201A	4 DD	46.8	0.098	12.9	0.098	10.3	AP-42 Tbl 1.4-1	
H-2201B	4 DD	46.8	0.098	12.9	0.098	10.3	AP-42 Tbl 1.4-1	
H-2202	4 DD	91	0.133	34.0	0.133	27.3	Stack Test	3 by 1-hr
H-2401	5 DD	100.8	0.275	45.9	0.275	49.0	AP-42 Tbl 1.4-1	
H-2501	Naph Frac	113.6	0.085	23.7	0.085	23.0	Stack Test	3 by 1-hr
H-3101A	5 CDU	309.8	0.314	304.0	0.314	290.5	Stack Test	3 by 1-hr
H-3101B	5 CDU	309.8	0.223	215.9	0.223	206.3	Stack Test	3 by 1-hr

* Denotes a combined fuel fired unit where the emissions factor shown is based on the ratio of the fuel specific AP-42 weight averaged based upon the units annual heat input

APPENDIX A
List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines, and Compressor Engines

Source Code	Unit	Unit Size	2004		2005		Emissions Factor	
		(mmBtu/hr)	(lb/mmBtu)	(tons/yr)	(lb/mmBtu)	(tons/yr)	Basis	Time Period
H-4101A	6 CDU	309.2	0.265	307.3	0.265	253.7	Stack Test	3 by 1-hr
H-4101B	6 CDU	309.2	0.304	352.5	0.304	291.0	Stack Test	3 by 1-hr
H-4201*	3 Vac.	227.6	0.411	264.3	0.392	240.4	AP-42 Tbls 1.3-1/1.4-1*	
H-4202*	3 Vac.	220.4	0.411	255.9	0.392	232.8	AP-42 Tbls 1.3-1/1.4-1*	
H-4301A	7 DD	47.9	0.098	12.5	0.098	10.9	AP-42 Tbl 1.4-1	
H-4301B	7 DD	51.1	0.098	13.3	0.098	11.6	AP-42 Tbl 1.4-1	
H-4302	7 DD	135.2	0.105	37.7	0.105	32.9	Stack Test	3 by 1-hr
H-4401	3 Plat.	127.3	0.130	48.6	0.130	43.3	Stack Test	3 by 1-hr
H-4402	3 Plat.	77.9	0.098	22.4	0.098	20.0	AP-42 Tbl 1.4-1	
H-4451	3 Plat.	351.6	0.154	158.9	0.154	141.6	Stack Test	3 by 1-hr
H-4452	3 Plat.	251.2	0.154	113.5	0.154	101.2		
H-4453	3 Plat.	115.6	0.154	52.2	0.154	46.6		
H-4454	3 Plat.	63.3	0.154	28.6	0.154	25.5		
H-4455	3 Plat.	124	0.091	33.1	0.091	29.5	Stack Test	3 by 1-hr
H-4502	2 Sulf.	77.5	0.098	23.6	0.098	21.5	AP-42 Tbl 1.4-1	
H-4503	2 Sulf.	90.3	0.098	27.5	0.098	25.0	AP-42 Tbl 1.4-1	
H-4504	2 Sulf.	70.4	0.098	21.4	0.098	19.5	AP-42 Tbl 1.4-1	
H-4505	2 Sulf.	43.8	0.098	13.3	0.098	12.1	AP-42 Tbl 1.4-1	
H-4601A	6 DD	52.1	0.098	12.5	0.098	11.2	AP-42 Tbl 1.4-1	
H-4601B	6 DD	52.1	0.098	12.5	0.098	11.2	AP-42 Tbl 1.4-1	
H-4602	6 DD	101.3	0.108	26.8	0.108	24.1	Stack Test	3 by 1-hr
H-5301A	9 DD	61.2	0.098	17.8	0.098	15.5	AP-42 Tbl 1.4-1	
H-5301B	9 DD	61.2	0.098	17.8	0.098	15.5	AP-42 Tbl 1.4-1	
H-5302	9 DD	112	0.148	49.3	0.148	42.9	Stack Test	3 by 1-hr
H-5401	4 Plat.	114.1	0.123	35.9	0.123	26.6	Stack Test	3 by 1-hr
H-5402	4 Plat.	78.8	0.098	19.8	0.098	14.6	AP-42 Tbl 1.4-1	
H-5451	4 Plat.	248	0.147	93.4	0.147	69.1	Stack Test	3 by 1-hr
H-5452	4 Plat.	201.7	0.147	75.9	0.147	56.2	Stack Test	3 by 1-hr

* Denotes a combined fuel fired unit where the emissions factor shown is based on the ratio of the fuel specific AP-42 weight averaged based upon the units annual heat input

APPENDIX A
List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines, and Compressor Engines

Source Code	Unit	Unit Size	2004		2005		Emissions Factor	
		(mmBtu/hr)	(lb/mmBtu)	(tons/yr)	(lb/mmBtu)	(tons/yr)	Basis	Time Period
H-5453	4 Plat.	114.4	0.147	43.1	0.147	31.9	Stack Test	3 by 1-hr
H-5454	4 Plat.	64.7	0.147	24.4	0.147	18.0	Stack Test	3 by 1-hr
H-5455	4 Plat.	129.2	0.121	40.0	0.121	29.6	Stack Test	3 by 1-hr
H-8501A	Coker	195	0.019	15.9	0.019	14.0	Stack Test	3 by 1-hr
H-8501B	Coker	195	0.018	15.1	0.018	13.3	Stack Test	3 by 1-hr
B-1151	#1 F. Boiler	205.4	0.261	108.9	0.261	114.6	Stack Test	3 by 1-hr
B-1153	#3 F. Boiler	205.4	0.245	118.2	0.245	98.4	Stack Test	3 by 1-hr
B-1154	#4 F. Boiler	202.7	0.247	98.9	0.247	97.6	Stack Test	3 by 1-hr
B-1155	#5 F. Boiler	405.4	0.372	352.5	0.336	257.6	AP-42 Tbls 1.3-1/1.4-1*	
B-3301	#6 F. Boiler	202.7	0.316	142.9	0.316	152.3	Stack Test	3 by 1-hr
B-3302	#7 F. Boiler	202.7	0.299	134.0	0.299	134.6	Stack Test	3 by 1-hr
B-3303	#8 F. Boiler	405.4	0.227	217.3	0.227	214.5	Stack Test	3 by 1-hr
B-3304	#9 F. Boiler	405.4	0.257	248.2	0.257	237.1	Stack Test	3 by 1-hr
B-3701	#10 F. Boiler	225	0.061	34.0	0.061	33.3	Stack Test	3 by 1-hr
No.1 Gas Turbine		317.4	0.439	289.6	0.439	303.2	Stack Test	3 by 1-hr
No.2 Gas Turbine		317.4	0.383	278.8	0.383	258.5	Stack Test	3 by 1-hr
No.3 Gas Turbine		317.4	0.399	344.7	0.399	312.7	Stack Test	3 by 1-hr
No.4 Gas Turbine		317.4	0.518	644.6	0.518	556.2	Stack Test	3 by 1-hr
No.5 Gas Turbine		317.4	0.522	562.7	0.522	542.1	Stack Test	3 by 1-hr
No.6 Gas Turbine		317.4	0.623	677.6	0.623	616.2	Stack Test	3 by 1-hr
No.7 Gas Turbine		317.4	0.666	752.3	0.666	768.7	Stack Test	3 by 1-hr
No.8 Gas Turbine		394.8	0.625	632.2	0.625	594.2	Stack Test	3 by 1-hr
No.9 Gas Turbine		394.8	0.085	80.4	0.085	83.7	Stack Test	3 by 1-hr
No.10 Gas Turbine		325.0	0.101	133.1	0.101	121.6	Stack Test	3 by 1-hr
2DD	C-800A	21.5	3.45	191.5	3.45	154.5	Stack Test	3 by 1-hr
2DD	C-800B	21.5	3.45	191.5	3.45	154.5	Stack Test	3 by 1-hr
2DD	C-800C	21.5	3.45	191.5	3.45	154.5	Stack Test	3 by 1-hr
4DD	C-2201A	21.4	3.45	207.2	3.45	166.5	Stack Test	3 by 1-hr

* Denotes a combined fuel fired unit where the emissions factor shown is based on the ratio of the fuel specific AP-42 weight averaged based upon the units annual heat input

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APPENDIX A
List of Heaters and Boilers Greater Than 40 mmBTU Per Hour, Generating Turbines, and Compressor Engines

Source Code	Unit	Unit Size	2004		2005		Emissions Factor	
		(mmBtu/hr)	(lb/mmBtu)	(tons/yr)	(lb/mmBtu)	(tons/yr)	Basis	Time Period
4DD	C-2201B	21.4	3.45	207.2	3.45	166.5	Stack Test	3 by 1-hr
4DD	C-2201C	21.4	3.45	207.2	3.45	166.5	Stack Test	3 by 1-hr

* Denotes a combined fuel fired unit where the emissions factor shown is based on the ratio of the fuel specific AP-42 weight averaged based upon the units annual heat input

* Denotes a combined fuel fired unit where the emissions factor shown is based on the ratio of the fuel specific AP-42 weight averaged based upon the units annual heat input

APPENDIX B
Predictive Emissions Monitoring Systems Requirements

A Predictive Emissions Monitoring Systems ("PEMS") is a mathematical model that predicts the gas concentration of NO_x in the stack based on a set of operating data. Consistent with the CEMS data frequency requirements of 40 C.F.R. Part 60, the PEMS shall calculate a pound per million BTU value at least once every 15 minutes, and all of the data produced in a calendar hour shall be averaged to produce a calendar hourly average value in pounds per BTU.

The types of information needed for a PEMS are described below. The list of instruments and data sources shown below represent an ideal case. However, at a minimum, each PEMS shall include continuous monitoring for at least items 3-5 below. HOVENSA will identify and use existing instruments and refinery data sources to provide sufficient data for the development and implementation of the PEMS.

Instrumentation:

1. Absolute Humidity reading (one instrument per refinery, if available)
2. Fuel Density, Composition and/or specific gravity – On line readings (it may be possible if the fuel gas does not vary widely, that a grab sample and analysis may be substituted
3. Fuel Flow rate
4. Firebox temperature
5. Percent excess oxygen
6. Airflow to the firebox (if known or possibly estimated)
7. Process variable data – steam flow rate, temperature and pressure – process stream flow rate, temperature and pressure, etc

Computers & Software:

Relevant data will be collected and stored electronically, using computers and software. The hardware and software specifications will be specified in the source-specific PEMS.

Calibration and Setup:

1. Data will be collected for a period of 7 to 10 days of all the data that is to be used to construct the mathematical model. The data will be collected over an operating range that represents 80% to 100% of the normal operating range of the heater/boiler;
2. A "Validation" analysis shall be conducted to make sure the system is collecting data properly;
3. Stack Testing to develop the actual emissions data for comparison to the collected parameter data; and
4. Development of the mathematical models and installation of the model into the computer.

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APPENDIX B
Predictive Emissions Monitoring Systems Requirements

The elements of 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).

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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 equipments 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 test of the PEMS;

i. Conduct semiannual RA tests of the PEMS. Annual RA tests may be conducted if the most recent RA test result is less than or equal to 7.5%. Identify the most significant independently modifiable parameter affecting the emissions. Within the limits of safe unit operation and typical of the anticipated range of operation, test the selected parameter for three RA test data pairs at the low range, three at the normal operating range, and three at the high operating range of that parameter for a total of nine RA test data sets. Each RA test data set should be between 21 and 60 minutes in duration.

8. PEMS Tuning
   a. Perform tuning of the PEMS provided that the fundamental mathematical relationships in the PEMS model are not changed.

   b. Perform tuning of the PEMS in case of sensor recalibration or sensor replacement provided that the fundamental mathematical relationships in the PEMS model are not changed.

APPENDIX C
NSPS Subparts J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)[1]

Unit		Date of Compliance With Subpart J Fuel Gas Limit
2 Vis.	H-2185	Date of Lodging
Coker	H-8501	Date of Lodging
Coker	H-8502	Date of Lodging
LSG Heater	H-4901	Date of Lodging
Sulf Acid*	STK-7801	Date of Lodging
GT-13 / HRSG	G-3413 / H-3413	Date of Lodging
VER-1*	VER-1	Date of Lodging
VER-2*	VER-2	Date of Lodging

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APPENDIX C
NSPS Subparts J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)[1]

Unit		Date of Compliance With Subpart Ja Fuel Gas Limit
1 Vis.	H-101	12/31/2015
1 Vis.	H-104	12/31/2015
Utl. Fract.	H-160	12/31/2015
Penex	H-200	12/31/2015
Penex	H-201	12/31/2015
Penex	H-202	12/31/2015
Penex	C-200A	12/31/2015
Penex	C-200B	12/31/2015
Penex	C-200C	12/31/2015
2 CDU	H-401A	12/31/2015
2 CDU	H-401B	12/31/2015
2 CDU	H-401C	12/31/2015
2 Plat.	H-600	12/31/2015
2 Plat.	H-601	12/31/2015
2 Plat.	H-602	12/31/2015
2 Plat.	H-603	12/31/2015
2 Plat.	H-604	12/31/2015
2 Plat.	H-605	12/31/2015
2 Plat.	H-606	12/31/2015
2 DD	H-800A	12/31/2015
2 DD	H-800B	12/31/2015
2 DD	H-801	12/31/2015
3 CDU	H-1401A	12/31/2015
1 Vac.	H-1401B	12/31/2015
3 DD	H-1500	12/31/2015
3 DD	H-1501	12/31/2015
3 DD	C-1500A	12/31/2015
3 DD	C-1500B	12/31/2015
3 DD	C-1500C	12/31/2015
2 Vac.	H-2101	12/31/2015
2 Vac.	H-2102	12/31/2015
4 DD	H-2201A	12/31/2015
4 DD	H-2201B	12/31/2015
4 DD	H-2202	12/31/2015
5 DD	H-2400	12/31/2015

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APPENDIX C
NSPS Subparts J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)[1]

5 DD	H-2401	12/31/2015
5 DD	C-2400A	12/31/2015
5 DD	C-2400B	12/31/2015
Naph Frac	H-2501	12/31/2015
1 SRU	H-1032	12/31/2015
2 SRU	H-1042	12/31/2015
1 Beavon	H-1061	12/31/2015
#1 F. Boiler	B-1151	12/31/2015
#3 F. Boiler	B-1153	12/31/2015
#4 F. Boiler	B-1154	12/31/2015
#5 F. Boiler	B-1155	12/31/2015
G.T. #1*	G-1101E	12/31/2015
G.T. #2*	G-1101F	12/31/2015
G.T. #3*	G-1101G	12/31/2015

APPENDIX C
NSPS Subparts J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)[1]

Unit		Date of Compliance With Subpart J Fuel Gas Limit
5 CDU	H-3101A	12/31/15
5 CDU	H-3101B	12/31/15
6 CDU	H-4101A	12/31/15
6 CDU	H-4101B	12/31/15
3 Vac.	H-4201	12/31/15
3 Vac.	H-4202	12/31/15
7 DD	H-4301A	12/31/15
7 DD	H-4301B	12/31/15
7 DD	H-4302	12/31/15
3 Plat.	H-4401	12/31/15
3 Plat.	H-4402	12/31/15
3 Plat.	H-4451	12/31/15
3 Plat.	H-4452	12/31/15
3 Plat.	H-4453	12/31/15
3 Plat.	H-4454	12/31/15
3 Plat.	H-4455	12/31/15
2 Sulf.	H-4502	12/31/15
2 Sulf.	H-4503	12/31/15
2 Sulf.	H-4504	12/31/15
2 Sulf.	H-4505	12/31/15
6 DD	H-4601A	12/31/15
6 DD	H-4601B	12/31/15
6 DD	H-4602	12/31/15
6 DD	C-4601A	12/31/15
6 DD	C-4601B	12/31/15
6 DD	C-4601C	12/31/15
9 DD	H-5301A	12/31/15
9 DD	H-5301B	12/31/15
9 DD	H-5302	12/31/15
4 Plat.	H-5401	12/31/15
4 Plat.	H-5402	12/31/15
4 Plat.	H-5451	12/31/15
4 Plat.	H-5452	12/31/15
4 Plat.	H-5453	12/31/15
4 Plat.	H-5454	12/31/15

APPENDIX C
NSPS Subparts J or Ja Compliance Schedule for Listed Fuel Gas Combustion Devices (Other than Flaring Devices)[1]

4 Plat.	H-5455	12/31/15
3 & 4 SRU	H-4745	12/31/15
2 Beavon	H-4761	12/31/15
#6 F. Boiler	B-3301	12/31/15
#7 F. Boiler	B-3302	12/31/15
#8 F. Boiler	B-3303	12/31/15
#9 F. Boiler	B-3304	12/31/15
#10 F. Boiler	B-3307	12/31/15
G.T. #4	G-3404	12/31/15
G.T. #5	G-3405	12/31/15
G.T. #6	G-3406	12/31/15
G.T. #7	G-3407	12/31/15
G.T.#8*	G-3408	12/31/15
G.T.#9*	G-3409	12/31/15
G.T.#10*	G-3410	12/31/15
* Compliance based upon AMP submittal for EPA approval		

[1] HOVENSA intends to meet the listed compliance schedule by making physical and operational changes (i.e., physical changes to the East and West refinery amine treating systems as well as a swap from monoethanol amine (MEA) to methyldiethanol amine (MDEA)) to the fuel gas treatment system as part of a single phased project.

APPENDIX D
List of Flaring Devices Subject to NSPS Subparts J/Ja

Flaring Device	Date	Compliance Method
FCCU Low Pressure Flare	Seven (7) years from Date of Entry	Flare Gas Recovery
FCCU High Pressure Flare	Five (5) years from Date of Entry	Combusts only fuel gas exempt from emissions limitation in 60.102a(g) pursuant to 60.102a(h)
LPG Flare	Five (5) years from Date of Entry	Combusts only fuel gas that complies with 60.102a(g)
Flares 2 and 3	Seven (7) years from Date of Entry	Flare Gas Recovery
Flares 5, 6 and 7	Ten (10) years from Date of Entry	Flare Gas Recovery

Flares 1 and 4 are no longer in service and are not covered by this Consent Decree.

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APPENDIX E
HOVENSA'S LDAR and BWON Training Program Summary

The HOVENSA LLC training program will utilize a combination of training methods to educate refinery personnel on their roles and responsibilities within the LDAR and BWON programs. The extent of education on the programs (two hours, four hours, eight hours, etc.) will be based on the employee's job assignment within their respective department and the individual's management level.

All Environmental LDAR personnel will be trained on an annual basis on the requirements of their jobs through classroom based, computer-based, field-based, or other training methods. The training will consist of specific material and processes required for the knowledge of the program including certification testing. Listed below are some of the key elements and subjects of the training module that link to roles and responsibilities.

- knowledge of the refinery structure and systems
- refinery basics: process unit functions individually and how they work in partnership
- how to read and understand P&IDs and ISOS
- the applicable regulations
- the proper operation of monitoring equipment
- applicable LDAR procedures
- the systems in place to manage our data and compliance; electronic database such as LeakDAS and like systems
- the checks and balances required to maintain quality control and compliance
- the leadership skills required to manage and maintain a successful program

All other Operations, Maintenance and Contractor personnel will be trained on the requirements of their jobs through classroom based, computer-based, field-based, or other training methods. The training consists of material and processes required for their specific role and responsibility needed to ensure knowledge of the program including certification testing. Listed below are some of the key elements and subjects of the training module.

- knowledge of Environmental Department structure and contact information
- general knowledge of the environmental regulations (LDAR &_BWON)
- knowledge of regulatory inspection, documentation and repair requirements
- knowledge of fugitive emissions procedures
- knowledge of the Valve Preventative Maintenance Program
- knowledge of how to utilize the refinery system, such as SAP, to create work notifications and approvals and electronic inspections

The requirements of this training will be incorporated into HOVENSA's job specific training. All training will be reviewed and updated on a reoccurring basis (at least once every three (3) years). The certification testing will be utilized to assess the effectiveness of the training products.

APPENDIX F
Method 21 Monitoring Locations for API Separators 1, 2 and 3

API #1, 2, & 3	
Emission Points	**Total**
Access Hatch	48
Gauge Hatch	45
Fixed roof plates	150
Piping Penetration	52
Steel plate	31
Pump base	22
Hose connection	2
Conduit port	10
Valve stem port	16
Total	**376**

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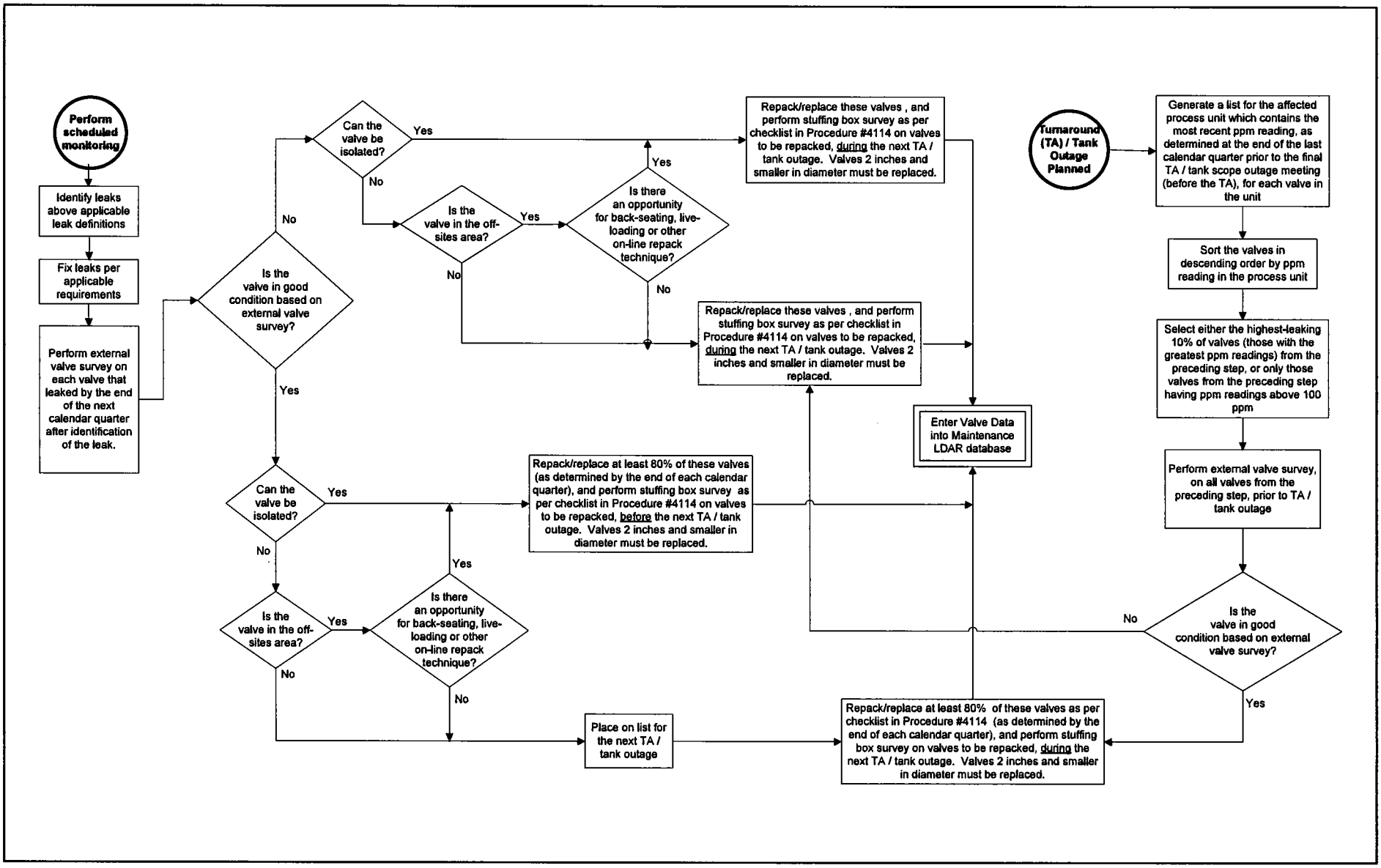
APPENDIX G
Valve Preventative Leak Maintenance Procedure Workflow Diagram



APPENDIX H
Additional Coker Project Injunctive Relief

Emissions Unit	Pollutant	Limit	Units	Averaging Time	Monitoring[a]	Reporting	Compliance Schedule
Coker Heater (two units)	**CO**	0.030	lb/mmBTU	Average of 3 1-hr samples	Annual Performance Test (EPA RM-10)	Within 60 Days of test	Date of Entry
	VOC	0.0050	lb/mmBTU	N/A	EPA RM-25 following any CO test exceedance	Within 60 Days of test	
Boiler 10	**CO**	0.070	lb/mmBTU	Average of 3 1-hr samples	Annual Performance Test (EPA RM-10)	Within 60 Days of test	Date of Entry
	VOC	0.0050	lb/mmBTU	N/A	EPA RM-25 following any CO test exceedance	Within 60 Days of test	
SRUs 1&2/Beavon 1	**TRS (Interim)**	200	ppmvd	Hourly rolling 12-hr average	NSPS TRS CEMS (40 C.F.R. 60 App A, B, & F)	NSPS quarterly reports	Date of Entry
		100	ppmvd	Daily rolling 30 day average	NSPS TRS CEMS (40 C.F.R. 60 App A, B, & F)	NSPS quarterly reports	Date of Entry
	TRS (Final)	162	ppmvd	Hourly rolling 12-hr average	NSPS TRS CEMS (40 C.F.R. 60 App A, B, & F)	NSPS quarterly reports	1/1/2014
		66	ppmvd	Daily rolling 30 day average	NSPS TRS CEMS (40 C.F.R. 60 App A, B, & F)	NSPS quarterly reports	1/1/2014
Tanks No. 6 Sour Water Stripper Sour Water Tank (TK-1071), Desalter Effluent Water (DEW) Tank (TK-1663)	**VOC**	Ext. Floating Roof Tank		N/A	Subpart Kb monitoring (40 C.F.R. §60.113b(b)) for Ext. Floating Roof Kb requirements: Seal Gap Measurements (Secondary once/yr, Primary once/5 yrs). Inspect seals and fittings each time the vessel is emptied and degassed.	NSPS reports	Tank 1071: 12/31/2011 Tank 1663: Date of Entry

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APPENDIX H
Additional Coker Project Injunctive Relief

Emissions Unit	Pollutant	Limit	Units	Averaging Time	Monitoring[a]	Reporting	Compliance Schedule
Pitch Storage (TK-8501)	VOC	Fixed Roof Tank		N/A	Subpart Kb monitoring (40 C.F.R. §60.110b-117b) Record and maintain records documenting the material stored in the hot pitch storage tank (TK-8501), showing that the tank remains exempt from control requirements in accordance with 40 C.F.R. 60, Subpart Kb, §60.110b(b).	NSPS reports	Date of Entry
Process equipment located in Coker Unit, Coker Gas Plant, No. 7 Amine, No. 5 Crude, No. 3 Vacuum, No. 3 Crude, No. 1 Vacuum, No. 1 Visbreaker, and No. 2, 4, 6, & 7 Distillate Desulfurizer Units and outside battery limit modifications to the terminal, tank farm & blending equipment	VOC	HON minus Connectors			Comply with 40 C.F.R. 63 Subpart H, except as noted below: -Leak testing is not required for connectors; -Use skip periods allowed in 40 C.F.R. Part 60 Subpart GGGa/VVa for leak testing valves and pumps.		Date of Entry

[a] For purposes of demonstrating compliance with limits which require an annual performance test, HOVENSA shall conduct the first performance test no later than twelve (12) months after the Date of Entry.

APPENDIX H
Additional Coker Project Injunctive Relief

Emissions Unit	Pollutant	Design/Work Practice Controls	Monitoring	Compliance Schedule
Coke Handling, Storage and Loading Facility	**PM (all species)**		Maintain records documenting design	Date of Entry
Coke Cutting/Coke Pit		High Pressure water cutting of coke & enclosed drop zones/coke pit (No roof)		
Coke Crusher		Enclosed[b] crusher structure. Moisture content control from initial cutting.		
Coke Transfer to Storage		Enclosed[b] conveyor to storage, Moisture content control from initial cutting.		
Coke Storage		Enclosed[b] storage buildings, baghouse for vent control, and moisture content control from initial cutting.		
Coke Loading		Enclosed[b] conveyor to loading dock. "Spout" containment loading to minimize drop emissions when loading ship.		

[b] Enclosed structures can have ventilation vents or access ways

APPENDIX I
Map of HOVENSA L.L.C.