

EXHIBIT A
PART 3 OF 6

(except for the Plaquemine LHC-2 and Plaquemine Poly C Flares, which must comply with this Subparagraph and the requirements of Appendix 1.2 in accordance with the terms set forth in Appendix 1.6).

44. 98% Combustion Efficiency. By no later than the Effective Date, the Applicable Defendant(s) must operate each Covered Flare with a minimum of a 98% Combustion Efficiency at all times when Waste Gas is vented to it. To demonstrate continuous compliance with the 98% Combustion Efficiency, the Applicable Defendant(s) must operate each Covered Flare in compliance with the applicable requirements in Paragraph 43 (except for the Plaquemine LHC-2 and Plaquemine Poly C Flares, which must comply with this Subparagraph and the requirements of Appendix 1.2 in accordance with the terms set forth in Appendix 1.6).

45. Standard During Instrument or Video Camera Downtime. If one or more of the following conditions (collectively referred to as *Instrument or Video Camera Downtime*) is present and renders the Applicable Defendant(s) incapable of operating a Covered Flare in accordance with the applicable NHV standards in Paragraph 43, the Applicable Defendant(s) must operate that Covered Flare in accordance with good air pollution control practices so as to minimize emissions from and ensure good combustion efficiency at that Covered Flare:

- a. Malfunction of an instrument or a data recording system, for an instrument needed to meet the requirement(s);
- b. Repairs following instrument Malfunction, for an instrument needed to meet the requirement(s);
- c. Scheduled maintenance of an instrument in accordance with the manufacturer's recommended schedule, for an instrument needed to meet the requirement(s); and/or
- d. Quality Assurance/Quality Control activities on an instrument needed to meet the requirement(s).

- e. Malfunction of a video camera or a video recording system.

The calculation of Instrument or Video Camera Downtime must be made in accordance with 40 C.F.R. § 60.13(h)(2). In no event may Instrument Downtime exceed 110 hours per calendar quarter that the Covered Flare affected by the Instrument Downtime is In Operation. For purposes of calculating the Instrument Downtime allowed pursuant to this Paragraph, the time used for NHV Analyzer or gas chromatograph calibration and validation activities may be excluded. Nothing in this Paragraph is intended to prevent the Applicable Defendant(s) from asserting Force Majeure as provided in Section XI as the cause of any period of Instrument Downtime.

46. Recordkeeping for All Covered Flares: Timing and Substance. The Applicable Defendant(s) must comply with the following recordkeeping requirements:

- a. By no later than the Effective Date, for each Covered Flare, the Applicable Defendant(s) must calculate and record each of the following parameters:
- (1) Volumetric flow rates of all gas streams that contribute to the Vent Gas volumetric flow rate (in scfm) (in fifteen-minute block averages and in accordance with any calculation requirements of Paragraphs 20 and Step 2 of Appendix 1.2);
 - (2) Assist Steam volumetric flow rate (in scfm) (in fifteen-minute block averages and in accordance with any calculation requirements of Paragraphs 20, 26, and Step 2 of Appendix 1.2);
 - (3) NHV_{vg} (in BTU/scf) (in fifteen-minute block averages in accordance with Step 1 of Appendix 1.2); and
 - (4) NHV_{cz} (in BTU/scf) (in fifteen-minute block averages in accordance with Step 3 of Appendix 1.2).
- b. By no later than the Effective Date, for each Covered Flare, the Applicable Defendant(s) must record the duration of all periods of Instrument Downtime for each Covered Flare that exceed 110 hours of Instrument Downtime in a Calendar Quarter that the Covered Flare is In Operation.

The Applicable Defendant(s) must record which instrument(s) experienced the downtime, which Covered Flare was affected by the downtime, an explanation of the cause(s) of the deviation, and a description of the corrective action(s) taken.

- c. By no later than the compliance dates specified in Paragraph 37 the Applicable Defendant(s) must record the dates and times of any periods that the Applicable Defendant(s) deviate(s) from the standards in Paragraph 38.e (FGRS Compressor availability). The Applicable Defendant(s) must also record the duration of the deviation, an explanation of the cause(s) of the deviation, and a description of the corrective action(s) taken.
- d. By no later than the Effective Date, at any time that the Applicable Defendant(s) deviate(s) from the emissions standards in Paragraphs 43-45 at any Covered Flare, the Applicable Defendant(s) must record the duration of the deviation, an explanation of the cause(s) of the deviation, and a description of the corrective action(s) taken.

F. Fenceline Monitoring Requirements

47. The Applicable Defendant(s) must install, maintain, and operate at each Covered Facility a Fenceline Monitoring Project in accordance with Appendix 2.2.

a. Term of Operation and Conditions for Discontinuance of the Fenceline Monitoring Project. The Fenceline Monitoring Project must be maintained and operated in accordance with Appendix 2.2 for a minimum of five years from the commencement of monitoring at each Covered Facility. Starting with the beginning of the fourth year from the commencement of monitoring at each Covered Facility, the Fenceline Monitoring Project may be discontinued only if the Covered Facility does not exceed the Action Level (as described in Appendix 2.2, Paragraph 3.f, hereafter “Action Level”) for a period of two additional consecutive years.

b. From the beginning of the fourth year from the commencement of monitoring at each Covered Facility, the Applicable Defendant may submit to EPA, within 180 days of the sample collection date resulting in the showing of an Action Level exceedance, a

written narrative report (including detailed data and root cause analysis) to support its view that the Action Level exceedance would not have occurred but for benzene emissions from a source or sources other than the Covered Facility. If EPA agrees that the Action Level exceedance in question would not have occurred but for a source or sources other than the Covered Facility, that Action Level exceedance will not be considered for the purpose of determining whether the Applicable Defendant has operated the Fenceline Monitoring Project for two consecutive years without an Action Level exceedance, as required for the discontinuance of the Fenceline Monitoring Project and, in turn, as required for determining that a Covered Facility has satisfactorily complied with all provisions of Section V (Compliance Requirements) for purposes of Paragraph 123.b.

VI. LOUISIANA BENEFICIAL ENVIRONMENTAL PROJECTS

48. The Defendants must implement the state beneficial environmental projects (BEPs) in accordance with all provisions of Appendix 2.1.

49. The Applicable Defendant(s) is(are) responsible for the satisfactory completion of the BEPs in accordance with the requirements of this Decree. In the context of this Consent Decree, *Satisfactory Completion* means completing the BEP in accordance with the requirements and schedules set forth in Appendix 2.1. The Applicable Defendant(s) may use contractors or consultants in planning and implementing the BEP.

50. BEP Completion Report. As part of the first Semi-Annual Report required by Section IX (Reporting Requirements) after a BEP is completed, the Applicable Defendant(s) must submit a BEP Completion Report to LDEQ, with a copy to EPA, in accordance with Section XVII (Notices). The BEP Completion Reports must contain the following information:

- a. a detailed description of the BEP as implemented;

- b. a description of any problems encountered in completing the BEP and the solutions thereto;
- c. an itemized list of all eligible BEP costs expended;
- d. a certification that the BEP has been fully implemented pursuant to the provisions of this Decree; and
- e. a description of the environmental and public health benefits resulting from implementation of the BEP (with a quantification of the benefits and pollutant reductions, if feasible).

51. LDEQ may require information in addition to that described in the preceding Paragraph in order to evaluate the Applicable Defendant's(s') BEP Completion Report(s).

52. After receiving the BEP Completion Report certifying completion of the BEP, LDEQ must notify the Applicable Defendant(s) whether the Applicable Defendant(s) have satisfactorily completed the BEP. If the Applicable Defendant(s) has(have) not completed the BEP in accordance with this Consent Decree, stipulated penalties may be assessed under Section X.

53. Disputes concerning the satisfactory performance of the BEPs and the amount of eligible BEP costs will be resolved exclusively by LDEQ under Section XII (Dispute Resolution). No other disputes arising under this Section will be subject to Section XII (Dispute Resolution).

54. Each submission required under this Section must be signed by an official with knowledge of the BEPs and must bear the certification language set forth in Paragraph 67.

55. Any public statement, oral or written, in print, film, or other media, made by the Applicable Defendant(s) making reference to the BEPs under this Decree must include the following language: "This project was undertaken in connection with the settlement of an enforcement action, *United States, et al. v. The Dow Chemical Company et al.* (E.D. LA) taken

on behalf of LDEQ under the Clean Air Act.”

56. For federal, state and local income tax purposes, the Applicable Defendant(s) agree(s) that it(they) will neither capitalize into inventory or basis nor deduct any costs or expenditures incurred in performing the BEP.

VII. PERMITS

57. Permits Needed for Compliance Obligations. The Applicable Defendant(s) must obtain all federal, state, and local permits necessary for performing any compliance obligation under this Consent Decree, including, without limitation, permits for the construction of pollution control technology and the installation of equipment at each Covered Facility. The Applicable Defendant(s) may seek relief under the provisions of Section XI (Force Majeure) for any delay in performing any such obligation resulting from a failure to obtain, or a delay in obtaining, any permit or approval required to fulfill such obligation, provided that the Defendants have submitted timely and complete applications and have taken all other actions necessary to obtain all such permits or approvals.

58. Permits to Ensure Survival of Consent Decree Limits and Standards after Termination of Consent Decree.

a. For the Hahnville and Plaquemine Facilities. By no later than one year after the Effective Date or one year after the respective deadline for the compliance requirements listed in Paragraph 58.c, whichever is later, the Applicable Defendant(s) must complete and submit to LDEQ’s consolidated preconstruction and Title V CAA permitting program, appropriate applications to incorporate the requirements listed in sub-Paragraph 58.c, as applicable, into a federally enforceable Title V permit for the Hahnville and Plaquemine Facilities, such that the requirements listed in sub-Paragraph 58.c: (i) become and remain after

Consent Decree termination “applicable requirements” as that term is defined in 40 C.F.R. § 70.2 and (ii) survive the termination of this Consent Decree. The underlying basis for the inclusion of the terms in Para 58.c into a LDEQ consolidated preconstruction and Title V CAA permit will be LDEQ’s preconstruction permitting authority and not this Consent Decree.

b. For the Freeport and Orange Facilities.

- (1) By no later than one year after the Effective Date or one year after the respective deadline for the compliance requirements listed in Paragraph 58.c, whichever is later, the Applicable Defendant(s) must complete and submit to the necessary permitting authorities in the state of Texas appropriate applications to incorporate the requirements listed in sub-Paragraph 58.c, as applicable, into a non-Title V, federally enforceable permit for the Freeport and Orange Facilities, such that the requirements listed in sub-Paragraph 58.c: (i) become and remain “applicable requirements” as that term is defined in 40 C.F.R. § 70.2 and (ii) survive the termination of this Consent Decree.
- (2) By no later than three years after the Effective Date or one year after the respective deadline for the compliance requirements listed in Paragraph 58.c, whichever is later, the Applicable Defendant(s) must complete and submit to the necessary permitting authorities in the state of Texas appropriate applications to modify, amend, or revise the Title V permit for the Freeport and Orange Facilities to incorporate the requirements listed in sub-Paragraph 58.c into each facility’s federally enforceable Title V permit.

c. The following requirements of the Consent Decree will survive termination: Paragraphs 19-23 (Instrumentation and Monitoring Systems), Paragraphs 25-27 (Specifications, Calibration, Quality Control, and Maintenance/Recording and Averaging Times/Operation), Paragraph 28, (Determining whether Flare has Potentially Recoverable Gas), Paragraph 38 (FGRS: Operation and Availability Requirements), Paragraphs 39-40 (Flaring Efficiency standards), Paragraph 42 (Operation According to Design), Paragraph 43.b (NHV_{cz}

Standards), Paragraph 44 (98% CE), Paragraph 45 (Standard During Instrument Downtime), and Paragraph 46 (Recordkeeping). Nothing in this Paragraph prohibits the Applicable Defendant(s) from seeking to incorporate Paragraph 24 (Optional Equipment) in a permit that survives termination of this Decree.

59. The permit applications and process of incorporating the requirements of this Consent Decree into Title V Permits must be in accordance with applicable state or local Title V rules, including applicable administrative amendment provisions of such rules. The Parties agree that the incorporation may be by amendment under 40 C.F.R. § 70.7(d) and analogous state Title V rules, where allowed by state law.

60. Following submission of the complete permit applications, the Applicable Defendant(s) must cooperate with LDEQ and TCEQ by promptly submitting all available information that either state agency seeks following its receipt of the permit materials.

VIII. EMISSION CREDIT GENERATION

61. Prohibitions.

a. Definition. *CD Emissions Reductions* means any NO_x, VOC, PM, PM_{TOTAL}, PM₁₀, PM_{2.5}, HAP, or CO emissions reductions that result from any projects conducted or controls used to comply with this Consent Decree.

b. The Applicable Defendant(s) must not apply for, obtain, trade, sell, generate, or use CD Emissions Reductions:

- (1) As netting reductions,
- (2) As emissions offsets, or
- (3) For the purpose of determining whether a project would result in a significant emissions increase or significant net emissions increase in any major or minor NSR permit or

permit proceeding, or for the purpose of obtaining offsets in any non-attainment NSR permit or permit proceeding. Baseline actual emissions during any twenty-four month period selected by the Applicable Defendant(s) must be adjusted downward to exclude any portion of the baseline emissions that would have been eliminated as CD Emissions Reductions (including the Waste Gas Minimization Requirements of Section V.C) had the Applicable Defendant(s) been complying with this Consent Decree during that twenty-four month period.

62. Outside the Scope of the Prohibition. Nothing in this Section is intended to prohibit the Defendants from using or generating:
- a. Emission reductions, netting credits, or emission offsets from process units at a Covered Facility that are not subject to an emission limitation pursuant to this Consent Decree;
 - b. CD Emissions Reductions for a Covered Facility's compliance with any rules or regulations designed to address regional haze or the non-attainment status of any area (excluding NSR rules, but including, for example, RACT rules) that apply to a Covered Facility; provided, however, that the Applicable Defendant(s) must not trade or sell any CD Emissions Reductions; and
 - c. CD Emissions Reductions for purposes of the state of Texas or state of Louisiana air toxics modeling programs.

IX. REPORTING REQUIREMENTS

63. Semi-Annual Reports. By no later than March 31 and September 30 of each year after the Effective Date, until termination of this Decree pursuant to Section XXI, the Applicable Defendant(s) must submit a Semi-Annual Report to EPA, and LDEQ for the Hahnville and Plaquemine Facilities, except that the first Semi-Annual Report is due ninety Days after the first full half-year after the Effective Date of this Consent Decree (*a half-year runs between January 1 and June 30 and between July 1 and December 31*). Each Semi-Annual Report must contain the following information for the preceding six months (*i.e.*, January

through June will be addressed in the report to be submitted by September 30, and July through December will be addressed in the report submitted by March 31);

- a. A description of the status of work performed and progress made toward implementing all requirements of Section V (Compliance Requirements) at the Covered Facilities. This topic should describe any major milestones completed and remaining to be completed;
- b. A description of any problems encountered or anticipated in meeting the requirements in Section V (Compliance Requirements) at the Covered Facilities, together with implemented or proposed solutions;
- c. A description of the status of any permit applications, including a summary of all permitting activity, pertaining to compliance with this Consent Decree;
- d. A copy of any reports that were submitted only to LDEQ and that pertain to compliance with this Consent Decree;
- e. A description of the Applicable Defendant's(s') progress in satisfying its(their) obligations in connection with the BEP(s) under Section VI including, at a minimum, a narrative description of activities undertaken; status of any construction or compliance measures, including the completion of any milestones set forth in the BEP Work Plan (attached as Appendix 2.1), and a summary of costs incurred since the previous report;
- f. Any updated WGMP for the Covered Facilities that is required to be submitted by Paragraph 31;
- g. Any summary of internal flaring incident reports as required by Paragraph 34;
- h. A summary of the following, per Covered Flare per Calendar Quarter (hours must be rounded to the nearest tenth):
 - (1) The total number of hours of Instrument Downtime claimed pursuant to Paragraph 45, expressed as both an absolute number and a percentage of time the Covered Flare that the instrument/equipment monitors, is In Operation and Capable of Receiving Sweep, Supplemental, and/or Waste Gas;
 - (2) If the total number of hours of Instrument Downtime claimed pursuant to Paragraph 45 exceeds 110 hours in a Calendar Quarter the Covered Flare affected by the

downtime is In Operation, an identification of the periods of downtime by date, time, cause (including Malfunction or maintenance), and, if the cause is asserted to be a Malfunction, the corrective action taken;

- (3) The total number of hours, expressed as both an absolute number of hours and a percentage of time that the Covered Flare was In Operation, in which the requirements of Paragraphs 43-44 were not applicable because the only gas or gases being vented were Pilot Gas or Purge Gas;
- (4) Exceedances of Combustion Efficiency Standards.
 - (A) The total number of hours, expressed as both an absolute number of hours and a percentage of time the Covered Flare was In Operation, of exceedances of the emissions standards in Paragraphs 43-44; provided however, that if the exceedance of these standards was for less than 110 hours in a Calendar Quarter and was due to one or more of the exceptions set forth in Paragraph 45, the report must so note; and
 - (B) If the exceedance of the emissions standards in Paragraphs 43-44 was not due to one of the exceptions in Paragraph 45 (Instrument Downtime), or if the exceedance was due to one or more of the exceptions in Paragraph 45 and the total number of hours caused by the exceptions exceeds 110 hours in a Calendar Quarter that the Covered Flare affected by the Instrument Downtime was In Operation, an identification of each block period that exceeded the standard, by time and date; the cause of the exceedance (including startup, shutdown, maintenance, or Malfunction), and if the cause is asserted to be a Malfunction, an explanation and any corrective actions taken; and
- (5) Compliance with Compressor Availability Requirements. Sufficient information to document compliance with the FGRS Compressor availability requirements of sub-Paragraph 38.e. For any period of non-compliance, the Applicable Defendant(s) must identify the date, cause, and corrective action taken.

- i. Any additional matters that the Applicable Defendant(s) believe should be brought to the attention of EPA, or LDEQ for the Hahnville and Plaquemine Facilities.

64. Fenceline Air Monitoring Reports. The Applicable Defendant(s) must submit Fenceline Air Monitoring Reports as part of each Semi-Annual Report. The Fenceline Air Monitoring Reports must contain the following information:

- a. In spreadsheet format, the individual sample results for each monitor comprising each Fenceline Monitoring System, each bi-weekly annual average benzene concentration difference value (once annual averages are available), and the corresponding meteorological data for the relevant monitoring periods. The first two columns of each spreadsheet must be the date and time for each sample taken; and
- b. A detailed description of the findings of any root cause analysis and corrective action(s) undertaken pursuant to Paragraph 3(g) of Appendix 2.2, including the known results of the corrective action(s) and the anticipated emissions reductions (in TPY per pollutant).

65. Annual Emissions Data. In the Semi-Annual Report that is submitted by or on March 31 of each year, the Applicable Defendant(s) must provide, for each Covered Flare, for the prior calendar year, the amount of emissions of the following compounds (in tons per year): VOCs, HAPs, NO_x, CO₂, methane, and ethane. Each Semi-Annual Report must also include a description of any non-compliance with the requirements of this Consent Decree not otherwise identified by Paragraph 63 along with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, the Applicable Defendant(s) must so state in the report. In such a case, the Applicable Defendant(s) must investigate the cause of the violation and then submit an amendment to the report, including a full explanation of the cause of the violation, within thirty Days of the Day the Applicable Defendant(s) become aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph

relieves the Applicable Defendant(s) of its(their) obligation to provide the notice required by Section XI (Force Majeure).

66. All reports required under this Section must be submitted to the persons and in the manner designated in Section XVI (Notices).

67. Each report submitted by the Applicable Defendant(s) under this Section must be signed by an official of each Covered Facility and include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

68. The reporting requirements of this Consent Decree do not relieve the Applicable Defendant(s) of any reporting obligations required by the Clean Air Act, LEQA, or their implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement.

69. Any information provided pursuant to this Consent Decree may be used by the United States, and LDEQ for the Hahnville and Plaquemine Facilities, in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

X. STIPULATED PENALTIES

70. The Applicable Defendant(s) is(are) liable for stipulated penalties to the United States, and LDEQ for the Hahnville and Plaquemine Facilities, for violations of this Decree as specified below, unless excused under Section XI (Force Majeure). A violation includes failing to perform any obligation required by the terms of this Decree, including any work plan or

schedule approved under this Decree, according to all applicable requirements of this Decree and within the specified time schedules established by or approved under this Decree.

71. Late Payment of Civil Penalty. If the Applicable Defendant(s) fail(s) to pay the civil penalty amounts required to be paid under Section IV (Civil Penalty) when due, the Defendants must pay a stipulated penalty of \$2,500 per Day for each Day that the payment is late.

72. Failure to Meet Compliance Requirements. For the following violations of Section V (Compliance Requirements):

Violation	Stipulated Penalty	
72.a. <u>Violations of Paragraph 18.</u> Failure to timely submit a Flare Data and Monitoring Systems and Protocol Report that complies with the requirements of Paragraph 18.	<u>Period of Delay or Noncompliance</u> Days 1-30 Days 31-60 Days 61 and later	<u>Penalty per Day per Violation</u> \$300 \$400 \$500
72.b. <u>Violations of Paragraph 19-23.</u> Failure to install the equipment and monitoring systems required by Paragraphs 19-23 by the compliance date or the dates and maintain them in accordance with the respective, applicable technical specifications in those Paragraphs and Paragraph 25, (except for the QA/QC requirements referenced in sub-Paragraph 24.a.i., which are covered in sub-Paragraph 72.c below).	<u>Period of Delay or Noncompliance per Monitoring System/ Control Instrument</u> Days 1-30 Days 31-60 Days 61 and later	<u>Penalty per Day per Monitoring System/Control Instrument</u> \$750 \$1,250 \$2,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater

<p>72.c. <u>Violations of the QA/QC requirements in Paragraph 25.a.i.</u> Failure to comply with the QA/QC requirements referenced in Paragraph 25.a.i.</p>	<table border="1"> <thead> <tr> <th><u>Violation of a:</u></th> <th><u>Penalty per Violation</u></th> </tr> </thead> <tbody> <tr> <td>Daily requirement</td> <td>\$100</td> </tr> <tr> <td>Quarterly requirement</td> <td>\$200 per Day late</td> </tr> <tr> <td>Annual requirement</td> <td>\$500 per Day late</td> </tr> </tbody> </table>	<u>Violation of a:</u>	<u>Penalty per Violation</u>	Daily requirement	\$100	Quarterly requirement	\$200 per Day late	Annual requirement	\$500 per Day late
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Daily requirement	\$100								
Quarterly requirement	\$200 per Day late								
Annual requirement	\$500 per Day late								
<p>72.d <u>Violations of Paragraph 27.</u> Except for 110 hours per Calendar Quarter, failure to operate each monitoring system required by Paragraphs 20 and 22-23 in accordance with Paragraph 27; provided however, that the Applicable Defendant(s) will not be liable for a stipulated penalty for violation of Paragraph 27 if, during the period of downtime, the only gas(es) being sent to the Covered Flare in question is/are Purge Gas and/or Pilot Gas. For any monitoring system that serves a dual purpose, this stipulated penalty applies per instrument only.</p>	<table border="1"> <thead> <tr> <th><u>Per Monitoring System/ Control Instrument, Number of Hours per Calendar Quarter</u></th> <th><u>Penalty per Hour per Monitoring System/ Control Instrument</u></th> </tr> </thead> <tbody> <tr> <td>0.25-50.0</td> <td>\$250</td> </tr> <tr> <td>50.25-100.0</td> <td>\$500</td> </tr> <tr> <td>Over 100.0</td> <td>\$1,000</td> </tr> </tbody> </table>	<u>Per Monitoring System/ Control Instrument, Number of Hours per Calendar Quarter</u>	<u>Penalty per Hour per Monitoring System/ Control Instrument</u>	0.25-50.0	\$250	50.25-100.0	\$500	Over 100.0	\$1,000
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0.25-50.0	\$250								
50.25-100.0	\$500								
Over 100.0	\$1,000								
<p>72.e. <u>Violations of Paragraph 29, 30, or 31.</u> Failure to timely submit a WGMP that complies with the requirements of the applicable Paragraph.</p>	<table border="1"> <thead> <tr> <th><u>Period of Delay or Noncompliance</u></th> <th><u>Penalty per Day per Violation</u></th> </tr> </thead> <tbody> <tr> <td>Days 1-30</td> <td>\$500</td> </tr> <tr> <td>Days 31-60</td> <td>\$750</td> </tr> <tr> <td>Days 61 and later</td> <td>\$1,000</td> </tr> </tbody> </table>	<u>Period of Delay or Noncompliance</u>	<u>Penalty per Day per Violation</u>	Days 1-30	\$500	Days 31-60	\$750	Days 61 and later	\$1,000
<u>Period of Delay or Noncompliance</u>	<u>Penalty per Day per Violation</u>								
Days 1-30	\$500								
Days 31-60	\$750								
Days 61 and later	\$1,000								
<p>72.f. <u>Violations of Paragraph 34.</u> Failure to timely develop a root cause flaring investigation report that complies with the requirements in sub-Paragraph 34.a; or failure to keep it as an internal record; or failure to timely submit a summary of the flaring incident reports that complies with the requirements in sub-Paragraph 34.b.</p>	<table border="1"> <thead> <tr> <th><u>Period of Delay or Noncompliance</u></th> <th><u>Penalty per Day per Violation</u></th> </tr> </thead> <tbody> <tr> <td>Days 1-30</td> <td>\$800</td> </tr> <tr> <td>Days 31-60</td> <td>\$1,600</td> </tr> <tr> <td>Days 61 and later</td> <td>\$3,000</td> </tr> </tbody> </table>	<u>Period of Delay or Noncompliance</u>	<u>Penalty per Day per Violation</u>	Days 1-30	\$800	Days 31-60	\$1,600	Days 61 and later	\$3,000
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Days 1-30	\$800								
Days 31-60	\$1,600								
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Days 1-30	\$1,000								
Days 31-60	\$2,000								
Days 61 and later	\$5,000								

<p>72.h. <u>Violations of Paragraph 37</u>. For failing to timely install any FGRS listed in Paragraph 37.</p>	<table border="0"> <thead> <tr> <th style="text-align: left;"><u>Period of Delay or Noncompliance per FGRS</u></th> <th style="text-align: left;"><u>Penalty per Day per FGRS</u></th> </tr> </thead> <tbody> <tr> <td>Days 1-30</td> <td>\$1,250</td> </tr> <tr> <td>Days 31-60</td> <td>\$3,000</td> </tr> <tr> <td>Days 61 and later</td> <td>\$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater</td> </tr> </tbody> </table>	<u>Period of Delay or Noncompliance per FGRS</u>	<u>Penalty per Day per FGRS</u>	Days 1-30	\$1,250	Days 31-60	\$3,000	Days 61 and later	\$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater
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Days 31-60	\$3,000								
Days 61 and later	\$5,000 or an amount equal to 1.2 times the economic benefit of delayed compliance, whichever is greater								
<p>72.i. <u>Violations of Paragraph 38</u>. For each failure to have the requisite number of FGRS Compressors Available for Operation or in operation in accordance with Paragraph 38.</p>	<p>Per FGRS, \$750 per hour or fraction thereof over the allowed percentage in a rolling 8,760-hour period that a Compressor required to be Available for Operation is not Available for Operation; provided however, that stipulated penalties will not apply for any hour in which a Compressor's unavailability did not result in flaring.</p>								
<p>72.j. <u>Violations of Paragraphs 43.b and 45</u>. For each Covered Flare, each failure to comply with the NHV_{cz} standard in Paragraph 43.b or the Standard During Instrument Downtime in Paragraph 45.</p>	<table border="0"> <thead> <tr> <th style="text-align: left;"><u>On a per Covered Flare basis, Hours per Calendar Quarter in Noncompliance</u></th> <th style="text-align: left;"><u>Penalty per Hour per Covered Flare</u></th> </tr> </thead> <tbody> <tr> <td>Hours 0.25-50.0</td> <td>\$50</td> </tr> <tr> <td>Hours 50.25-100.0</td> <td>\$100</td> </tr> <tr> <td>Hours over 100.0</td> <td>\$300</td> </tr> </tbody> </table> <p>For purposes of calculating the number of hours of noncompliance with the NHV_{cz} standard, all fifteen-minute periods of violation must be added together to determine the total.</p>	<u>On a per Covered Flare basis, Hours per Calendar Quarter in Noncompliance</u>	<u>Penalty per Hour per Covered Flare</u>	Hours 0.25-50.0	\$50	Hours 50.25-100.0	\$100	Hours over 100.0	\$300
<u>On a per Covered Flare basis, Hours per Calendar Quarter in Noncompliance</u>	<u>Penalty per Hour per Covered Flare</u>								
Hours 0.25-50.0	\$50								
Hours 50.25-100.0	\$100								
Hours over 100.0	\$300								
<p>72.l. <u>Violations of Paragraph 46</u>. Failure to record any information required to be recorded pursuant to Paragraph 46.</p>	<p>\$100 per Day</p>								
<p>72.m. <u>Violations of Paragraph 47 (Fenceline Monitoring Requirements)</u>. For each failure to comply with a requirement of Paragraph 47 or Appendix 2.2.</p>	<table border="0"> <thead> <tr> <th style="text-align: left;"><u>Period of Delay or Noncompliance</u></th> <th style="text-align: left;"><u>Penalty per Day</u></th> </tr> </thead> <tbody> <tr> <td>Days 1-30</td> <td>\$500</td> </tr> <tr> <td>Days 31-60</td> <td>\$1,500</td> </tr> <tr> <td>Days 61 and later</td> <td>\$3,000</td> </tr> </tbody> </table>	<u>Period of Delay or Noncompliance</u>	<u>Penalty per Day</u>	Days 1-30	\$500	Days 31-60	\$1,500	Days 61 and later	\$3,000
<u>Period of Delay or Noncompliance</u>	<u>Penalty per Day</u>								
Days 1-30	\$500								
Days 31-60	\$1,500								
Days 61 and later	\$3,000								

73. Failure to Meet Reporting Requirements. For each failure to submit a Semi-Annual Report that complies with the requirements of Section IX:

<u>Period of Delay or Noncompliance per Semi-Annual Report</u>	<u>Penalty per Day per Semi-Annual Report</u>
Days 1-30	\$300
Days 31-60	\$1,000
Days 61 and later	\$2,000

74. BEP Compliance. If the Applicable Defendant(s) fail(s) to satisfactorily complete the BEP(s) by the deadline set forth in Appendix 2.1, the Applicable Defendant(s) must pay stipulated penalties for each Day for which they fail to satisfactorily complete the BEP, as follows:

<u>Period of Delay or Noncompliance</u>	<u>Penalty per Violation per Day</u>
Days 1-30	\$500
Days 31-60	\$1,000
Days 61 and later	\$2,000

75. Incorporation of Consent Decree Requirements into Federally Enforceable Permits. For each failure to timely submit a permit application to incorporate the Consent Decree requirements required by Paragraph 57 to the state of Texas or LDEQ:

<u>Period of Delay or Non-Compliance</u>	<u>Penalty per Violation per Day</u>
Days 1-30	\$500
Days 31-60	\$1,500
Day 61 and later	\$3,000

76. Stipulated penalties under this Section begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and, except as provided in Paragraph 78, will continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties will accrue simultaneously for separate

violations of this Consent Decree.

77. The Applicable Defendant(s) must pay stipulated penalties to the United States, and LDEQ for violations arising from the Hahnville and Plaquemine Facilities, within sixty Days of a written demand by either Plaintiff unless the demand is disputed through compliance with the requirements of the dispute resolution provisions in Section XII of this Consent Decree. LDEQ may only demand stipulated penalties for violations at the Hahnville and Plaquemine Facilities. For stipulated penalties arising from violations at the Hahnville and Plaquemine Facilities, the Applicable Defendant(s) must pay fifty-percent of the total stipulated penalty amount due to the United States and fifty-percent to LDEQ, except in the case of stipulated penalties related to the performance of a BEP (Paragraph 74) where one-hundred percent of the stipulated penalty must be paid to LDEQ. For all other violations, the Applicable Defendant(s) must pay the total stipulated penalty due to the United States. The Plaintiff making a demand for payment of a stipulated penalty must simultaneously send a copy of the demand to the other Plaintiff.

78. The United States may, in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due to it under this Consent Decree. For stipulated penalties arising from violations at the Hahnville and Plaquemine Facilities, either Plaintiff may in the unreviewable exercise of its discretion, reduce or waive the portion of the stipulated penalties otherwise due to it under this Consent Decree. However, for stipulated penalties arising from violations at the Hahnville and Plaquemine Facilities, where only LDEQ demands stipulated penalties for a violation, and the United States does not join in the demand within thirty Days of receiving the demand, or timely joins in the demand but subsequently elects to waive or reduce stipulated penalties for that violation, the Applicable Defendant(s) must pay the

stipulated penalties due for the violation to the LDEQ, provided however, that the Applicable Defendant(s) will not pay more than fifty percent of the total stipulated penalties that could have been due if both the United States and LDEQ had issued a demand.

79. By no later than sixty Days after receiving a demand for stipulated penalties, the Applicable Defendant(s) may dispute liability for any or all stipulated penalties demanded by invoking the dispute resolution procedures of Section XII of this Decree (Dispute Resolution). In the event of a dispute over stipulated penalties, stipulated penalties will not accrue commencing on the later of either: (i) the date that, during dispute resolution under Section XII, the Plaintiffs and the Applicable Defendant(s) agree(s) upon; or (ii) the date that the Applicable Defendant(s) file a motion with the Court under Paragraph 92; provided however, that in order for stipulated penalties to cease accruing pursuant to either (i) or (ii), the Applicable Defendant(s) must place the disputed amount in an interest-bearing commercial escrow account, the administrative costs of which are to be borne by the Applicable Defendant(s), and are not subject to deduction from any amount(s) owed to the United States or LDEQ. The interest rate must be determined in accordance with 28 U.S.C. § 1961. If the dispute is resolved in the Applicable Defendant's(s') favor, the escrowed amount plus accrued interest will be returned to the Applicable Defendant(s); otherwise, the United States, and LDEQ for violations arising from the Hahnville and Plaquemine facilities, will be entitled to the amount determined by the Court to be due, plus interest that has accrued on such amount in the escrow account.

80. The Applicable Defendant(s) must pay stipulated penalties owing to the United States in the manner set forth and with the confirmation notices required by Paragraph 14, except that the transmittal letter must state that the payment is for stipulated penalties and must state for which violation(s) the penalties are being paid. The Applicable Defendant(s) must pay

stipulated penalties owing to LDEQ in the manner set forth and with the confirmation notices required by Paragraph 17.

81. If the Applicable Defendant(s) fail(s) to pay stipulated penalties according to the terms of this Consent Decree, the Applicable Defendant(s) is(are) liable for interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due. Nothing in this Paragraph may be construed to limit the United States or LDEQ from seeking any remedy otherwise provided by law for the Applicable Defendant's(s') failure to pay any stipulated penalties.

82. The payment of penalties and interest, if any, do not alter in any way the Applicable Defendant's(s') obligation(s) to complete the performance of the requirements of this Consent Decree.

83. Non-Exclusivity of Remedy. Stipulated penalties are not the United States' or LDEQ's exclusive remedy for violations of this Consent Decree. Subject to the provisions of Section XIV (Effect of Settlement/Reservation of Rights), the United States and LDEQ expressly reserves the right to seek any other relief it deems appropriate for the Applicable Defendant's(s') violation(s) of this Decree or applicable law, including but not limited to an action against any Applicable Defendant(s) for statutory penalties, additional injunctive relief, mitigation or offset measures, and/or contempt. However, the amount of any statutory penalty assessed for a violation of this Consent Decree must be reduced by an amount equal to the amount of any stipulated penalty assessed and paid pursuant to this Consent Decree.

XI. FORCE MAJEURE

84. *Force Majeure*, for purposes of this Consent Decree, is defined as any event beyond the control of the Applicable Defendant(s), of any entity controlled by the Applicable

Defendant(s), or of the Applicable Defendant's(s') contractors, which delays or prevents the performance of any obligation under this Decree despite the Applicable Defendant's(s') best efforts to fulfill the obligation. The requirement that the Applicable Defendant(s) exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential Force Majeure and best efforts to address the effects of any potential Force Majeure: (a) as it is occurring and (b) following the potential Force Majeure, such that the delay and any adverse effects of the delay are minimized. Force Majeure does not include the Applicable Defendant's(s') financial inability to perform any obligation under this Consent Decree.

85. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a Force Majeure, the Applicable Defendant(s) must provide written notice to EPA, and LDEQ for the Hahnville and Plaquemine Facilities, in accordance with Section XVII no later than fifteen Days after the date the Applicable Defendant(s) first knew, or by the exercise of due diligence should have known, that the event might cause a delay. This notice must specifically reference this Paragraph of the Consent Decree and must provide an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementing any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Applicable Defendant's(s') rationale for attributing such delay to a Force Majeure if it intends to assert such a claim; and a statement as to whether, in the opinion of the Applicable Defendant(s), such event may cause or contribute to an endangerment to public health, welfare or the environment. The Applicable Defendant(s) must include with any notice all the available documentation upon which the Applicable Defendant(s) rely to support the claim that the delay was attributable to a Force Majeure. Failure to comply with the above

requirements will preclude the Applicable Defendant(s) from asserting any claim of Force Majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. The Applicable Defendant(s) will be deemed to know of any circumstance of which the Applicable Defendant(s), any entity controlled by an Applicable Defendant(s), or an Applicable Defendant's(s') contractors knew or should have known.

86. If EPA, after a reasonable opportunity for review and comment by LDEQ for the Hahnville and Plaquemine Facilities, agrees that the delay or anticipated delay is attributable to a Force Majeure, the time for performance of the obligations under this Consent Decree that are affected by the Force Majeure will be extended by EPA, after a reasonable opportunity for review and comment by LDEQ for the Hahnville and Plaquemine Facilities, for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the Force Majeure will not, by itself, extend the time for performance of any other obligation. EPA will notify the Applicable Defendant(s) in writing of the length of the extension, if any, for performing the obligations affected by the Force Majeure.

87. If EPA, after a reasonable opportunity for review and comment by LDEQ for the Hahnville and Plaquemine Facilities, does not agree that the delay or anticipated delay has been or will be caused by a Force Majeure, EPA will notify the Applicable Defendant(s) in writing of its decision.

88. If the Applicable Defendant(s) elect(s) to invoke the dispute resolution procedures set forth in Section XII (Dispute Resolution), it(they) must do so no later than forty-five Days after receiving EPA's notice of decision. In any such dispute resolution proceeding, the Applicable Defendant(s) has(have) the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a Force Majeure, that

the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that the Applicable Defendant(s) complied with the requirements of Paragraphs 84 and 85. If the Applicable Defendant(s) carry this burden, the delay at issue will be deemed to not be a violation by the Applicable Defendant(s) of the affected obligation of this Consent Decree identified to EPA and the Court.

XII. DISPUTE RESOLUTION

89. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section are the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree.

90. Informal Dispute Resolution. Any dispute subject to dispute resolution under this Consent Decree will first be the subject of informal negotiations. The dispute will be considered to have arisen when the Applicable Defendant(s) send(s) the United States, and with respect to the Hahnville and Plaquemine Facilities, LDEQ, a written Notice of Dispute. Such Notice of Dispute must clearly state the matter in dispute. The period of informal negotiations must not exceed sixty Days from the date the dispute arises, unless that period is modified by written agreement. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States will be considered binding unless, within forty-five Days after the conclusion of the informal negotiation period, the Applicable Defendant(s) invoke(s) formal dispute resolution procedures as set forth below.

91. Formal Dispute Resolution. The Applicable Defendant(s) must invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States and, with respect to the Hahnville and Plaquemine Facilities,

EXHIBIT A

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LDEQ, a written Statement of Position regarding the matter in dispute. The Statement of Position must include, but need not be limited to, any factual data, analysis, or opinion supporting the Applicable Defendant's(s') position and any supporting documentation relied upon by the Applicable Defendant(s).

92. The United States, after consultation with LDEQ for the Hahnville and Plaquemine Facilities, must serve its Statement of Position within forty-five Days of receiving the Applicable Defendant's(s') Statement of Position. The United States' Statement of Position must include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States. The United States' Statement of Position will be binding on the Applicable Defendant(s), unless the Applicable Defendant(s) files(file) a motion for judicial review of the dispute in accordance with the following Paragraph.

93. The Applicable Defendant(s) may seek judicial review of the dispute by filing with the Court and serving on the United States and, with respect to the Hahnville and Plaquemine Facilities, LDEQ, in accordance with Section XVII (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within forty-five Days of receiving the United States' Statement of Position pursuant to the preceding Paragraph. The motion must contain a written statement of the Applicable Defendant's(s') position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and must set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Decree.

94. The United States will respond to the Applicable Defendant's(s') motion within the time period allowed by the Local Rules of this Court. LDEQ may participate for the

Hahnville and Plaquemine Facilities. The Applicable Defendant(s) may file a reply memorandum, to the extent permitted by the Local Rules.

95. Standard of Review. In a formal dispute resolution proceeding under this Section, the Applicable Defendant(s) bear(s) the burden of demonstrating that its(their) position complies with this Consent Decree and the CAA, and that they are entitled to relief under applicable principles of law. The United States, after consultation with LDEQ for the Hahnville and Plaquemine Facilities, reserves the right to argue that its position is reviewable only on the administrative record and must be upheld unless arbitrary and capricious or otherwise not in accordance with law, and the Applicable Defendant(s) reserve(s) the right to argue to the contrary. An administrative record of the dispute will be maintained by EPA and will contain all Statements of Position, including supporting documentation. Upon written request from the Applicable Defendant(s), EPA will provide a copy of the administrative record. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

96. The invocation of dispute resolution procedures under this Section will not, by itself, extend, postpone, or affect in any way any obligation of the Applicable Defendant(s) under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter will accrue from the first Day of noncompliance, but payment may be stayed pending resolution of the dispute as provided in Paragraph 79. If the Applicable Defendant(s) does(do) not prevail on the disputed issue, stipulated penalties will be assessed and paid as provided in Section X (Stipulated Penalties).

XIII. INFORMATION COLLECTION AND RETENTION

97. The United States, and LDEQ for the Hahnville and Plaquemine Facilities, and their representatives, contractors, and consultants, have the right of entry into any facility covered by this Consent Decree, at all reasonable times, upon presentation of credentials, to:

- a. monitor the progress of activities required under this Consent Decree;
- b. verify any data or information submitted to the United States or LDEQ in accordance with the terms of this Consent Decree;
- c. obtain documentary evidence, including photographs and similar data; and
- d. assess the Applicable Defendant's(s') compliance with this Consent Decree.

98. Upon request, the Applicable Defendant(s) must provide EPA, and LDEQ for the Hahnville and Plaquemine Facilities, or their authorized representatives, splits of any samples taken by the Applicable Defendant(s). Upon request, EPA and LDEQ must provide the Applicable Defendant(s) split(s) of any samples taken by EPA or LDEQ.

99. Notwithstanding Section XXI (Termination), and except for data recorded by any video camera required pursuant to Paragraph 22, until three years after the termination of this Consent Decree, the Applicable Defendant(s) must retain, and must instruct their contractors and agents to preserve, all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in their or their contractors' or agents' possession or control, or that come into their or their contractors' or agents' possession or control, and that relate to Applicable Defendant's(s') performance of its obligations under this Consent Decree. This information-retention requirement applies regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States, or LDEQ for the Hahnville

and Plaquemine Facilities, the Applicable Defendant(s) must provide copies of any documents, records, or other information required to be maintained under this Paragraph. The Applicable Defendant(s) must retain the data recorded by the video cameras required pursuant to Paragraph 22 for one year from the date of recording.

100. Except for emissions data, the Applicable Defendant(s) may also assert that information required to be provided under this Section is protected as Confidential Business Information (CBI) under 40 C.F.R. Part 2. As to any information that the Applicable Defendant(s) seek(s) to protect as CBI, the Applicable Defendant(s) must follow the procedures set forth in 40 C.F.R. Part 2. To assert that any information required to be submitted to LDEQ is entitled to be protected as confidential, the Applicable Defendant(s) must follow the law and procedures as set forth in the applicable provisions of La. R.S. 30:2030; La. R.S. 30:2074.D; and LAC 33:I.Chapter 5.

101. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States or LDEQ pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of the Applicable Defendant(s) to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XIV. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

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

- a. *BTU/scf Flared Gas Requirements* means the requirements found in the following regulations:
 - (1) 40 C.F.R. § 60.18(c)(3)(ii);
 - (2) 40 C.F.R. § 63.11(b)(6)(ii); and

- (3) The provisions of 40 C.F.R. Part 60, 61, and 63 that require compliance with 40 C.F.R. § 60.18(c)(3)(ii) (for example 40 C.F.R. § 61.349(a)(2)(iii)) or 40 C.F.R. § 63.11(b)(6)(ii) (for example 40 C.F.R. § 63.113(a)(1)(i)) and are applicable requirements in a federally enforceable permit for a Covered Facility as of the Effective Date.
- b. *General Flare Requirements* means the requirements found in the following regulations:
- (1) 40 C.F.R. § 60.18(c)(1) and 40 C.F.R. § 63.11(b)(4) (both relate to a prohibition on Visible Emissions);
 - (2) 40 C.F.R. § 60.18(c)(2) and 40 C.F.R. § 63.11(b)(5) (both relate to flame presence);
 - (3) 40 C.F.R. § 60.18(c)(4) and 40 C.F.R. § 63.11(b)(7) (both relate to exit velocity requirements for Steam-Assisted Flares); and
 - (4) 40 C.F.R. § 60.18(e) and 40 C.F.R. § 63.11(b)(3) (both relate to operation during emissions venting).
- c. *Good Air Pollution Control Practice Requirements* means the requirements found in the following regulations:
- (1) 40 C.F.R. § 60.11(d);
 - (2) 40 C.F.R. § 61.12(c); and
 - (3) 40 C.F.R. § 63.6(e)(1)(i).
- d. *PSD/NNSR Requirements* means the Prevention of Significant Deterioration and Non-Attainment New Source Review requirements found in the following:
- (1) 42 U.S.C. § 7475;
 - (2) 40 C.F.R. §§ 52.21(a)(2)(iii) and 52.21(j)-52.21(r)(5);
 - (3) 42 U.S.C. §§ 7502(c)(5) and 7503(a)-(c);
 - (4) 40 C.F.R. Part 51, Appendix S, Part IV, Conditions 1-4;
 - (5) any applicable, federally enforceable state or local regulation that implements, adopts, or incorporates the federal provisions cited in sub-Paragraphs 102.d(1)-(4); and

- (6) any applicable Title V permit requirement that implements, adopts, or incorporates the federal provisions or federally enforceable state provisions cited in sub-Paragraphs 102.d(1)-(5).
- e. *Requirements Related to Monitoring, Operation, and Maintenance According to Flare Design* means the requirements found in the following regulations:
- (1) 40 C.F.R. § 60.18(d);
 - (2) 40 C.F.R. § 63.11(b)(1); and
 - (3) The provisions of 40 C.F.R. Part 60, 61, and 63 that require compliance with 40 C.F.R. § 60.18(d) (for example 40 C.F.R. § 61.349(a)(2)(iii)) or 40 C.F.R. § 63.11(b)(1) (for example 40 C.F.R. § 63.113(a)(1)(i)) and are applicable requirements in a federally enforceable permit for a Covered Facility as of the Effective Date.

103. Entry of this Consent Decree resolves the civil claims of the United States and LDEQ for the violations alleged in the Complaint filed in this action and occurring through the Date of Lodging, and as noted below.

104. Resolution of Claims for Violating PSD/NNSR Requirements at the Covered Flares. With respect to emissions of VOCs, NO_x, and CO from the Covered Flares, entry of this Consent Decree resolves the civil claims of the United States and LDEQ against the Applicable Defendant(s) for violations of the PSD/NNSR Requirements resulting from construction or modification from the date of the pre-Lodging construction or modification through the Date of Lodging.

105. Resolution of Pre-Lodging Claims at the Covered Flares for Failing to Comply with: (a) BTU/scf Flared Gas Requirements; (b) General Flare Requirements; (c) Good Air Pollution Control Practice Requirements; and (d) Requirements Related to Monitoring, Operation, and Maintenance According to Flare Design. With respect to emissions of VOCs and

HAPs from the Covered Flares, entry of this Consent Decree resolves the civil claims of the United States and LDEQ against the Applicable Defendant(s) for violations of the following requirements from the date those claims accrued until the Date of Lodging: a) BTU/scf Flared Gas Requirements, b) General Flare Requirements, c) Good Air Pollution Control Practice Requirements, and d) Requirements Related to Monitoring, Operation, and Maintenance According to Flare Design.

106. Resolution of Claims Continuing Post-Lodging for Failing to Comply with Requirements Related to Monitoring, Operation, and Maintenance According to Flare Design for all Covered Flares. With respect to emissions of VOCs and HAPs from the Covered Flares, entry of this Consent Decree resolves the civil claims of the United States and LDEQ against the Applicable Defendant(s) for violations of Requirements Related to Monitoring, Operation, and Maintenance According to Flare Design, but only to the extent that the claims are based on the Defendants' use of too much steam in relation to Vent Gas flow. The resolution in this Paragraph extends through the Effective Date for the Covered Flares.

107. Resolution of Title V Violations. Entry of this Consent Decree resolves the civil claims of the United States and LDEQ against the Applicable Defendant(s) for the violations of Sections 502(a), 503(c), and 504(a) of the CAA, 42 U.S.C. §§ 7661a(a), 7661b(c), 7661c(a), and of 40 C.F.R. §§ 70.1(b), 70.5(a) and (b), 70.6(a) and (c), and 70.7(b), that are based upon the violations resolved by Paragraphs 103-105 for the time frames set forth in those Paragraphs.

108. Reservation of Rights - Resolution of Liability in Paragraphs 106-107 can be Rendered Void. Notwithstanding the resolution of liability in Paragraphs 106-107, for the period of time between the Date of Lodging and the post-lodging dates specified in Paragraph 106, those resolutions of liability will be rendered void if the Applicable Defendant(s)

materially fail to comply with any of the obligations and requirements of Section V (Compliance Requirements) and Section VIII (Emission Credit Generation). To the extent that a material failure involves a particular Covered Facility, the resolution of liability will be rendered void only with respect to claims involving that particular Covered Facility. The resolutions of liability in Paragraphs 106-107 will not be rendered void if the Applicable Defendant(s), as expeditiously as practicable, remedy such material failure and pay all stipulated penalties due as a result of such material failure.

109. The United States and LDEQ reserve all legal and equitable remedies available to enforce the provisions of this Consent Decree. This Consent Decree will not be construed to limit the rights of the United States or LDEQ to obtain penalties or injunctive relief under the Clean Air Act, LEQA, or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as specified in Paragraphs 103-106. The United States and LDEQ further reserve all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at, or posed by, the Covered Facilities, whether related to the violations addressed in this Decree or otherwise.

110. In any subsequent administrative or judicial proceeding initiated by the United States or LDEQ for injunctive relief, civil penalties, other appropriate relief relating to a Covered Facility or Defendant's(s') violations, the Applicable Defendant(s) must not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or LDEQ in the subsequent

proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraphs 103-106.

111. This Consent Decree is not a permit, or a modification of any permit, under any federal, state, or local laws or regulations. The Applicable Defendant(s) is(are) responsible for maintaining compliance with all applicable federal, state, and local laws, regulations, and permits; and the Applicable Defendant's(s') compliance with this Consent Decree is no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States and LDEQ do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that the Applicable Defendant's(s') compliance with any aspect of this Consent Decree will result in compliance with provisions of the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, LEQA, La.R.S. 30:2001 *et seq.*, or with any other provisions of federal, state, or local laws, regulations, or permits.

112. This Consent Decree does not limit or affect the rights of the Applicable Defendant(s) or of the United States or LDEQ against any third parties, not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against the Applicable Defendant(s), except as otherwise provided by law.

113. This Consent Decree must not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XV. COSTS

114. The Parties must bear their own costs of this action, including attorneys' fees, except that the United States and LDEQ are entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty or any stipulated penalties due but not paid by the Applicable Defendant(s).

XVI. 26 U.S.C. § 162(f)(2)(A)(ii) IDENTIFICATION

115. For purposes of the identification requirement of Section 162(f)(2)(A)(ii) of the Internal Revenue Code, 26 U.S.C. § 162(f)(2)(A)(ii), performance of Section V (Compliance Requirements), Paragraphs 18-32 and 34-47; Section VII (Permits), Paragraphs 57-58; Section IX (Reporting Requirements), Paragraphs 63-67; Section XIII (Information Collection and Retention), Paragraphs 97-100; Section II (Applicability), Paragraph 10; and related Appendices 1.2-1.10 and 2.2 is restitution or required to come into compliance with law.

XVII. NOTICES

116. Unless otherwise specified in this Decree, whenever notifications, submissions, or communications are required by this Consent Decree, they must be made in writing and addressed as follows. Submission by first class mail or courier is required and will be sufficient to comply with the notice requirements of this Consent Decree; however, for the submission of technical information or data, the Applicable Defendant(s) must submit the data in electronic form (*viz.*, an optical disk, hard disk drive (HDD), solid state drive (SSD), or an approved flash memory device). The email addresses listed below are to permit the submission of additional electronic courtesy copies.

As to the United States by email: eescdcopy.enrd@usdoj.gov
Re: DJ # 90-5-2-1-11114

and as to EPA as set forth below.

As to the United States by
first-class mail:

EES Case Management Unit
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-5-2-1-11114

As to the United States Attorney
by first-class mail:

United States Attorney
Eastern District of Louisiana
650 Poydras Street,
Suite 1600
New Orleans, LA 70130

As to EPA by first-class mail:

Director, Air Enforcement Division
Office of Civil Enforcement
United States Environmental Protection Agency
Mail Code 2242-A
Regular Mail: 1200 Pennsylvania Ave, N.W.
William Jefferson Clinton Building
Room 1119
Washington, DC 20460-0001
Express Mail: Use same address but use 20004 as
the zip code

and

Associate Director
Air, Toxics, and Inspections Coordination
Branch (6 EN-A)
United States EPA, Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270-2102

As to EPA by email:

parrish.robert@epa.gov
foley.patrick@epa.gov
stucky.maria@epa.gov

As to LDEQ:

Celena J. Cage
Administrator, Enforcement Division
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312

and

Dwana C. King
Oscar Magee
P.O. Box 4302
Office of the Secretary, Legal Affairs Division
Louisiana Department of Environmental Quality
Baton Rouge, Louisiana 70821-4302

As to the Defendants:

Rich A. Wells
Vice President Operations U.S. Gulf Coast
Site Director Texas Operations
The Dow Chemical Company
2301 N. Brazosport Blvd.
Freeport, TX 77541

Carlos J. Moreno
Counsel, U.S. Operations, Regulatory & NA
The Dow Chemical Company
332 SH 332 E (4A016)
Lake Jackson, TX 77566

117. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

118. Notices submitted pursuant to this Section will be deemed submitted upon mailing, unless otherwise provided in this Consent Decree or by mutual agreement of the Parties in writing.

XVIII. EFFECTIVE DATE

119. The Effective Date of this Consent Decree is the date upon which this Consent Decree is entered by the Court or a motion to enter the Consent Decree is granted, whichever occurs first, as recorded on the Court's docket.

XIX. RETENTION OF JURISDICTION

120. The Court retains jurisdiction over this case until termination of this Consent Decree, for the purpose of: a) resolving disputes arising under this Decree pursuant to Section XII, b) entering orders modifying this Decree pursuant to Section XX, and c) effectuating or enforcing compliance with the terms of this Consent Decree.

XX. MODIFICATION

121. Except as otherwise allowed in Paragraphs 14 and 117 (notice recipients and addresses), the terms of this Consent Decree, including any attached appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Decree, it will be effective only upon approval by the Court.

122. Any disputes concerning modification of this Consent Decree must be resolved pursuant to Section XII (Dispute Resolution), provided, however, that, instead of the burden of proof provided by Paragraph 95, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XXI. TERMINATION

123. Before seeking termination of the entire Consent Decree or the set of requirements applicable to one or more Covered Facilities, the Applicable Defendant(s) must:

- a. Pay the civil penalty and any accrued stipulated penalties as required by this Consent Decree;
- b. Satisfactorily comply with all provisions of Section V (Compliance Requirements) applicable to the Covered Facility that is subject to the termination request;
- c. Operate for at least one year in satisfactory compliance with the limitations and standards set forth in Paragraphs 38.e (availability of FGRS compressors), 43.b (NHV_{cz} standard), and 44 (98% Combustion Efficiency) for all of the Covered Flares at the Covered Facility that is subject to the termination request;
- d. Complete the BEPs in Section VI;
- e. Apply for and receive federally enforceable permits for the Hahnville and Plaquemine Facilities issued pursuant to LDEQ's consolidated preconstruction and Title V CAA permitting program, which incorporate

the requirements set forth in Paragraph 58.c. The cited basis for the incorporated requirements in the LDEQ's consolidated permit cannot be this Consent Decree and will be the minor NSR authority to issue new limits; and

- f. Apply for and receive federally enforceable Non-Title V permits for the Freeport and Orange Facilities incorporating the requirements set forth in Paragraph 58.c. and submit applications to incorporate the requirements set forth in Paragraph 58.c into a Title V operating permit for the Freeport and Orange Facilities. The cited basis for the incorporated requirements cannot be this Consent Decree and will be the federally enforceable non-Title V permit.

124. After the Applicable Defendant(s) believe they have satisfied the conditions for termination set forth in the preceding Paragraph for either the entire Consent Decree or for one or more of the Covered Facilities, the Applicable Defendant(s) may submit a request for termination to the United States by certifying such compliance in accordance with the certification language in Paragraph 67 (Request for Termination). In the Request for Termination, the Applicable Defendant(s) must demonstrate that it(they) have satisfied the conditions for termination set forth in the preceding Paragraph, as well as submit all necessary supporting documentation.

125. Following receipt by the United States, and LDEQ for the Hahnville and Plaquemine Facilities, of the Applicable Defendant's(s') Request for Termination, the Parties will confer informally concerning the request. If the United States, after consultation with LDEQ for the Hahnville and Plaquemine Facilities, agrees that the Decree may be terminated, the Parties will submit, for the Court's approval, a joint stipulation terminating the Decree.

126. If the United States, after consultation with LDEQ for the Hahnville and Plaquemine Facilities, does not agree that the Decree may be terminated, or if the Applicable Defendant(s) do not receive a written response from the United States within ninety Days of the

Applicable Defendant's(s') submission of the Request for Termination, the Defendants may invoke dispute resolution under Section XII.

XXII. PUBLIC PARTICIPATION

127. This Consent Decree will be lodged with the Court for a period of not less than thirty Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations indicating that the Consent Decree is inappropriate, improper, or inadequate. The Applicable Defendant(s) consent to entry of this Consent Decree without further notice and agree not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of the Decree, unless the United States has notified the Applicable Defendant(s) and LDEQ in writing that it no longer supports entry of the Decree.

128. The Parties agree and acknowledge that final approval by LDEQ and entry of this Consent Decree are subject to the requirements of La. R.S. 30:2050.7, which provides for: (a) public notice of this Consent Decree in the newspaper of general circulation and the official journal of the parish in which the Hahnville and Plaquemine Facilities are located, (b) an opportunity for public comment for a period of not less than forty-five Days and consideration of any comments received, and (c) concurrence by the State Attorney General. LDEQ reserves the right to withdraw or withhold consent if the comments regarding this Decree disclose facts or considerations that indicate that this Decree is inappropriate, improper, or inadequate.

XXIII. SIGNATORIES/SERVICE

129. Each undersigned representative of the Applicable Defendant(s), LDEQ, and the Assistant Attorney General for the Environment and Natural Resources Division of the

Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party or Parties he or she represents to this document.

130. This Consent Decree may be signed in counterparts, and its validity cannot be challenged on that basis. The Applicable Defendant(s) agree 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 Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

XXIV. INTEGRATION

131. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than deliverables that are subsequently submitted and approved pursuant to this Decree, the Parties acknowledge there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Consent Decree.

XXV. FINAL JUDGMENT

132. Upon approval and entry of this Consent Decree by the Court, this Decree constitutes a final judgment of the Court as to the United States, LDEQ, and the Applicable Defendant(s).

XXVI. APPENDICES

133. The Appendices listed in the Tables of Appendices are attached to and part of this

Consent Decree.

Dated and entered this ___ Day of _____, 202_

UNITED STATES DISTRICT JUDGE
EASTERN DISTRICT OF LOUISIANA

THE UNDERSIGNED PARTIES enter into this Consent Decree entered in the matter of the *United States et al. v. The Dow Chemical Company et al.* (E.D. LA.).

FOR THE UNITED STATES OF AMERICA:

Jonathan D. Brightbill
Principal Deputy Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

Attorney-in-Charge:

/s/ Kirk W. Koester
Kirk W. Koester
Trial Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, DC 20044-7611
202.514.9009 (direct)
202.532.3272 (mobile)
kirk.koester@usdoj.gov

Peter G. Strasser
United States Attorney
Eastern District of Louisiana

THE UNDERSIGNED PARTIES enter into this Consent Decree entered in the matter of the *United States et al. v. The Dow Chemical Company et al.* (E.D. LA.).

FOR THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY:

SUSAN Digitally signed by
BODINE SUSAN BODINE
 Date: 2020.10.05
 10:38:53 -04'00'

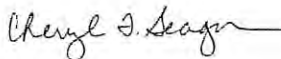
Susan Parker Bodine
Assistant Administrator
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Rosemarie A. Kelley
Director, Office of Civil Enforcement
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Thomas P. Carroll
Acting Director, Air Enforcement Division
Office of Civil Enforcement
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

THE UNDERSIGNED PARTIES enter into this Consent Decree entered in the matter of the *United States et al. v. The Dow Chemical Company et al.* (E.D. LA.).

FOR THE UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, REGION 6:

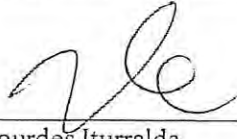


Digitally signed by CHERYL SEAGER
DN: c=US, o=U.S. Government, ou=Environmental
Protection Agency, cn=CHERYL SEAGER,
0.9.2342.19200300.100.1.1=68001003651793
Date: 2020.09.21 11:38:55 -05'00'

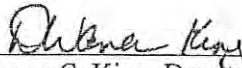
Cheryl Seager
Director - Compliance Assurance and Enforcement
Division
United States Environmental Protection Agency
Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270-2102

THE UNDERSIGNED PARTIES enter into this Consent Decree entered in the matter of the *United States et al. v. The Dow Chemical Company, et al.* (E.D. LA.), subject to the public notice and comment requirements of La. R.S. 30:2050.7.

FOR THE LOUISIANA DEPARTMENT OF
ENVIRONMENTAL QUALITY:



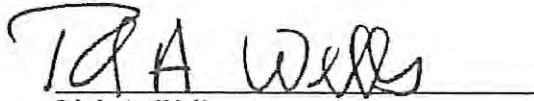
Lourdes Iturralde
Assistant Secretary
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312



Dwana C. King, Deputy General Counsel
(La. Bar #20590)
Oscar Magee, Trial Attorney
(La. Bar # 32302)
Office of the Secretary, Legal Affairs Division
Louisiana Department of Environmental Quality
P.O. Box 4302
Baton Rouge, Louisiana 70821-4302
Phone: 225.219.3985
Fax: 225.219.4068
dwana.king@la.gov
oscar.magee@la.gov

THE UNDERSIGNED PARTIES enter into this Consent Decree entered in the matter of the *United States et al. v. The Dow Chemical Company et al.* (E.D. LA.).

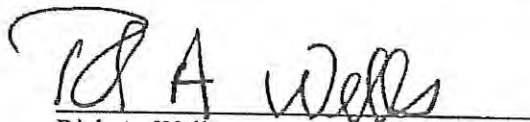
FOR THE DOW CHEMICAL COMPANY:

A handwritten signature in black ink, appearing to read "RA Wells", is written over a horizontal line.

Rich A. Wells
Vice President Operations U.S. Gulf Coast
Site Director Texas Operations
The Dow Chemical Company
2301 N. Brazosport Blvd.
Freeport, TX 77541

THE UNDERSIGNED PARTIES enter into this Consent Decree entered in the matter of the *United States et al. v. The Dow Chemical Company et al.* (E.D. LA.).

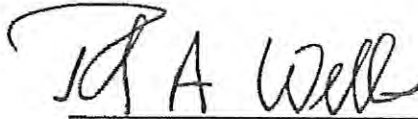
FOR UNION CARBIDE CORPORATION:

A handwritten signature in black ink, appearing to read "R A Wells", written over a horizontal line.

Rich A. Wells
Vice President Operations U.S. Gulf Coast
Site Director Texas Operations
The Dow Chemical Company
2301 N. Brazosport Blvd.
Freeport, TX 77541

THE UNDERSIGNED PARTIES enter into this Consent Decree entered in the matter of the *United States et al. v. The Dow Chemical Company et al.* (E.D. LA.).

FOR PERFORMANCE MATERIALS NA:

A handwritten signature in black ink, appearing to read "R A Wells". The signature is written in a cursive style with a large initial "R" and "A".

Rich A. Wells
Vice President Operations U.S. Gulf Coast
Site Director Texas Operations
The Dow Chemical Company
2301 N. Brazosport Blvd.
Freeport, TX 77541

United States, et al.
v.
Dow Chemical Company, et al

APPENDICES TO CONSENT DECREE

APPENDIX 1.2

**Calculating Combustion Efficiency, Net Heating Value of the
Combustion Zone Gas ($Nh_{v_{cz}}$), the Net Heating Value Dilution
Parameter ($Nh_{v_{dil}}$), and Flare Tip Velocity (V_{tip})**

APPENDIX 1.2

All abbreviations, constants, and variables are defined in the Key on Page 8 of this Appendix.

Combustion Efficiency Equation:

$$CE = \frac{[CO_2]}{[CO_2] + [CO] + [OC]}$$

where:

$[CO_2]$ = Concentration in volume percent or ppm-meters of carbon dioxide in the combusted gas immediately above the Combustion Zone

$[CO]$ = Concentration in volume percent or ppm-meters of carbon monoxide in the combusted gas immediately above the Combustion Zone

$[OC]$ = Concentration in volume percent or ppm-meters of the sum of all organic carbon compounds in the combusted gas immediately above the Combustion Zone, counting each carbon molecule separately where the concentration of each individual compound is multiplied by the number of carbon atoms it contains before summing (e.g., 0.1 volume percent ethane will count as 0.2 percent OC because ethane has two carbon atoms)

For purposes of using the *CE* equation, the unit of measurement for CO₂, CO, and OC must be the same; that is, if “volume percent” is used for one compound, it must be used for all compounds. “Volume percent” cannot be used for one or more compounds and “ppm-meters” for the remainder.

Step 1: Determine the Net Heating Value of the Vent Gas (NHV_{vg})

The Company must determine the Net Heating Value of the Vent Gas (NHV_{vg}) based on composition monitoring data on a 15-minute block average basis according to the following requirements. If the Company monitors separate gas streams that combine to comprise the total vent gas flow to a Covered Flare, the 15-minute block average Net Heating Value will be determined separately for each measurement location according to the following requirements and a flow-weighted average of the gas stream Net Heating Values will be used to determine the 15-minute block average Net Heating Value of the cumulative Vent Gas. The NHV_{vg} 15-minute block averages must be calculated for set 15-minute time periods starting at 12 midnight to 12:15 AM, 12:15 AM to 12:30 AM and so on, concluding at 11:45 PM to midnight.

Step 1a: Equation or Output to be Used to Determine NHV_{vg} at a Measurement Location

For any gas stream for which the Company complies with Paragraph 23 by collecting compositional analysis data in accordance with the method set forth in 23.a: Equation 1 must be used to determine the NHV_{vg} of a specific sample by summing the Net Heating Value for each

APPENDIX 1.2

individual component by individual component volume fractions. Individual component Net Heating Values are listed in Table 1 of this Appendix.

$$NHV_{vg} = \sum_{i=1}^n (x_i \cdot NHV_i) \quad \text{Equation 1}$$

For any gas stream for which the Company complies with Paragraph 23 by collecting direct Net Heating Value monitoring data in accordance with the method set forth in 23.b but for which a Hydrogen Concentration Monitor is not used: Use the direct output (measured value) of the monitoring system(s) (in BTU/scf) to determine the NHV_{vg} for the sample.

For any gas stream for which the Company complies with Paragraph 23 by collecting direct Net Heating Value monitoring data in accordance with the method set forth in 23.b and for which a Hydrogen Concentration Monitor is also used: Equation 2 must be used to determine the NHV_{vg} for each sample measured via the Net Heating Value monitoring system. Where hydrogen concentration data is collected, Equation 2 performs a net correction for the measured heating value of hydrogen since the theoretical Net Heating Value for hydrogen is 274 Btu/scf, but for the purposes of this Consent Decree, a Net Heating Value of 1,212 Btu/scf may be used ($1,212 - 274 = 938$ BTU/scf).

$$NHV_{vg} = NHV_{measured} + 938x_{H2} \quad \text{Equation 2}$$

Step 1b: Calculation Method to be Used in Applying Equation/Output to Determine NHV_{vg}

For any Covered Flare for which the Company complies with Paragraph 23 by using a continuous monitoring system in accordance with the method set forth in 23.a or 23.b: The Company may elect to determine the 15-minute block average NHV_{vg} using either the Feed-Forward Calculation Method or the Direct Calculation Method (both described below). The Company need not elect to use the same methodology at all Covered Flares with a continuous monitoring system; however, for each such Covered Flare, the Company must elect one calculation method that will apply at all times, and use that method for all continuously monitored flare vent streams associated with that Covered Flare. If the Company intends to change the calculation method that applies to a Covered Flare, the Company must notify the EPA 30 days in advance of such a change.

Feed-Forward Calculation Method. When calculating NHV_{vg} for a specific 15-minute block: Use the results from the first sample collected during an event (for periodic Vent Gas flow events) for the first 15-minute block associated with that event.

If the results from the first sample collected during an event (for periodic Vent Gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the second 15-minute block associated with that event.

APPENDIX 1.2

1. For all other cases, use the results that are available from the most recent sample prior to the 15-minute block period for that 15-minute block period for all Vent Gas streams. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 AM and the analysis is completed at 12:38 AM, the results are available at 12:38 AM and these results would be used to determine compliance during the 15-minute block period from 12:45 AM to 1:00 AM.

Direct Calculation Method. When calculating NHV_{vg} for a specific 15-minute block:

1. If the results from the first sample collected during an event (for periodic Vent Gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the first 15-minute block associated with that event.
2. For all other cases, use the arithmetic average of all NHV_{vg} measurement data results that become available during a 15-minute block to calculate the 15-minute block average for that period. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 AM and the analysis is completed at 12:38 AM, the results are available at 12:38 AM and these results would be used to determine compliance during the 15-minute block period from 12:30 AM to 12:45 AM.

Step 2: Determine Volumetric Flow Rates of Gas Streams

The Company must determine the volumetric flow rate in standard cubic feet (scf) of vent gas, along with the volumetric flow rates (in scf) of any Supplemental Gas, Assist Steam, and Premix Assist Air, over a 15-minute block average basis. The 15-minute block average volumetric flow rates must be calculated for set 15-minute time periods starting at 12 midnight to 12:15 AM, 12:15 AM to 12:30 AM and so on, concluding at 11:45 PM to midnight.

For any gas streams for which the Company complies with Paragraph 20 by using a monitoring system that directly records volumetric flow rate: Use the direct output (measured value) of the monitoring system(s) (in scf), as corrected for the temperature and pressure of the system to standard conditions (i.e., a temperature of 20 °C (68 °F) and a pressure of 1 atmosphere) to then calculate the average volumetric flow rate of that gas stream for the 15-minute block period.

For Vent Gas, Assist Steam, Premix Assist Air gas streams, or purge nitrogen for which the Company complies with Paragraph 20 by using a mass flow monitor to determine volumetric flow rate: Equation 3 must be used to determine the volumetric flow rate of Vent Gas, Assist Air, or Assist Steam by converting mass flow rate to volumetric flow at standard conditions (i.e., a temperature of 20 °C (68 °F) and a pressure of 1 atmosphere). Equation 3 uses the molecular weight of the gas stream as an input to the equation; therefore, if the Company elects to use a mass flow monitor to determine volumetric flow rate of Vent Gas, the Company

APPENDIX 1.2

must collect compositional analysis data for such Vent Gas in accordance with the method set forth in 23.a. For assist steam, use a molecular weight of 18 pounds per pound-mole. For assist air, use a molecular weight of 29 pounds per pound-mole. For purge nitrogen, use a molecular weight of 28 pounds per pound-mole. The converted volumetric flow rates at standard conditions from Equation 3 must then be used to calculate the average volumetric flow rate of that gas stream for the 15-minute block period.

$$Q_{vol} = \frac{Q_{mass} * 385.3}{MWt} \quad \text{Equation 3}$$

For gas streams for which the molecular weight of the gas is known and for which the Company complies with Paragraph 20 by using continuous pressure/temperature monitoring system(s): Use appropriate engineering calculations to determine the average volumetric flow rate of that gas stream for the 15-minute block period. For assist steam, use a molecular weight of 18 pounds per pound-mole. For assist air, use a molecular weight of 29 pounds per pound-mole. For purge nitrogen, use a molecular weight of 28 pounds per pound-mole. For Vent Gas, molecular weight must be determined by collecting compositional analysis data for such Vent Gas in accordance with the method set forth in 21.a.

Step 3: Calculate the Net Heating Value of the Combustion Zone Gas (NHV_{cz})

For any Covered Flare at which: 1) the Feed-Forward Calculation Method is used; 2) gas composition or Net Heating Value monitoring is performed in a location representative of the cumulative vent gas stream; and 3) Supplemental Gas flow additions to the flare are directly monitored: Equation 4 must be used to determine the 15-minute block average NHV_{cz} based on the 15-minute block average vent gas, supplemental gas, and assist gas flow rates.

$$NHV_{cz} = \frac{(Q_{vg} - Q_{NG2} + Q_{NG1}) * NHV_{vg} + (Q_{NG2} - Q_{NG1}) * NHV_{NG}}{Q_{vg} + Q_s + Q_{a,premix}} \quad \text{Equation 4}$$

For the first 15-minute block period of an event, Q_{NG1} must use the volumetric flow value for the current 15-minute block period (i.e. $Q_{NG1} = Q_{NG2}$). NHV_{NG} must be determined using one of the following methods: 1) direct compositional or Net Heating Value monitoring of the natural gas stream in accordance with Step 1; or 2) for purchased (pipeline quality) natural gas streams, the Company may elect to either: a) use annual or more frequent grab sampling at any one representative location; or b) assume a Net Heating Value of 920 BTU/scf.

For all other Covered Flares: Equation 5 must be used to determine the 15-minute block average NHV_{cz} based on the 15-minute block average vent gas and assist gas flow rates. For periods when there is no Assist Steam flow or Premix Assist Air flow, $NHV_{cz} = NHV_{vg}$.