

TABLE OF CONTENTS

	Page
I. JURISDICTION AND VENUE	2
II. APPLICABILITY.....	3
III. DEFINITIONS.....	4
IV. EMISSION REDUCTION REQUIREMENTS.....	6
A. North Hill Creek Compressor Station Facility.....	6
A-1. Dehydrators.....	7
A-2. Storage Tanks	8
A-3. Compressor Engines	8
A-4. Periods of Startup, Shutdown, Malfunction and Maintenance	10
A-5. Pneumatic Controllers	10
A-6. Permitting Requirement.....	11
A-7. General Recordkeeping Requirement.....	12
A-8. General Pollution Control Requirement	12
B. New Compression Facilities	12
B-1. Dehydrators.....	13
B-2 Storage Tanks.....	14
B-3. Engines.....	15
B-4. Periods of Startup, Shutdown, Malfunction and Maintenance	20
B-5. Pneumatic Controllers.....	21
B-6. Permitting Requirement	21
B-7 General Recordkeeping Requirement	21
B-8. General Pollution Control Requirement	21
C. Existing Oil and Natural Gas Production Facilities.....	22
C-1. Dehydrators.....	22
C-2 Condensate/Crude Oil Storage Tanks.....	25
C-3. Periods of Startup, Shutdown, Malfunction and Maintenance	27
C-4. Pneumatic Controllers.....	28
C-5. General Recordkeeping Requirement	29
C-6. General Pollution Control Requirement	29
D. New Oil and Natural Gas Production Facilities.....	29
D-1. Dehydrators.....	29

TABLE OF CONTENTS

(continued)

	Page
D-2. Condensate/Crude Oil Storage Tanks.....	32
D-3. Periods of Startup, Shutdown, Malfunction and Maintenance.....	34
D-4. Pneumatic Controllers.....	35
D-5. General Record Keeping Requirement.....	35
D-6. General Pollution Control Requirement.....	35
V. LIMITS ON POTENTIAL TO EMIT.....	36
VI. PERFORMANCE OPTIMIZATION REVIEWS.....	37
VII. WIND RIVER DOWN-HOLE WATER SEPARATION CONVERSION PROJECT.....	41
VIII. WIND RIVER SHALE-PLATING PROJECT.....	42
IX. BILL BARRETT EMISSION EVALUATION PROJECT.....	43
X. BILL BARRETT VAPOR RECOVERY FEASIBILITY PROJECT.....	44
XI. CIVIL PENALTY.....	47
XII. SUPPLEMENTAL ENVIRONMENTAL PROJECTS.....	48
A. Wind River Class II Underground Injection Well SEP.....	48
B. Wind River Road Dust SEP.....	49
C. General Requirements.....	49
XIII. RECORDKEEPING AND REPORTING REQUIREMENTS.....	52
XIV. STIPULATED PENALTIES.....	54
XV. FORCE MAJEURE.....	61
XVI. DISPUTE RESOLUTION.....	64
XVII. INFORMATION COLLECTION AND RETENTION.....	66
XVIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS.....	68
XIX. COSTS.....	70
XX. NOTICES.....	70
XXI. SALES OR TRANSFERS OF OWNERSHIP/OPERATOR INTERESTS.....	71
XXII. EFFECTIVE DATE.....	72
XXIII. RETENTION OF JURISDICTION.....	72
XXIV. MODIFICATION.....	73
XXV. TERMINATION.....	73
XXVI. PUBLIC PARTICIPATION.....	74
XXVII. SIGNATORIES/SERVICE.....	74
XXVIII. INTEGRATION.....	75
XXIX. FINAL JUDGMENT.....	75

TABLE OF CONTENTS
(continued)

Page

XXX. APPENDICES 76

WHEREAS, Plaintiff, the United States of America, (the "United States") on behalf of the United States Environmental Protection Agency ("EPA"), has simultaneously with lodging this Consent Decree filed a Complaint alleging that Wind River Resources Corporation ("Wind River") and Bill Barrett Corporation ("Bill Barrett") (referred to together as "Defendants" and singularly as "Defendant"), violated requirements of the Clean Air Act (the "Act") and the federal regulations implementing the Act applicable to the North Hill Creek Compressor Station located southwest of Vernal, Utah in the Uinta Basin;

WHEREAS, EPA administers the Act's programs for the Prevention of Significant Deterioration ("PSD"), National Emission Standards for Hazardous Air Pollutants ("NESHAP"), and federal operating permits under Title V;

WHEREAS, the Defendants do not admit the violations alleged in the Complaint and a Compliance Order that was issued by EPA to the Defendants on September 29, 2006;

WHEREAS, the Defendants have worked cooperatively with the United States to settle this matter and committed to reduce or avoid annual emissions in the Uinta Basin of Nitrogen Oxides ("NOx"), Carbon Monoxide ("CO"), Hazardous Air Pollutants ("HAPs"), Particulate Matter ("PM"), and Volatile Organic Compounds ("VOCs"), and also to undertake various projects to conserve methane gas by implementation of the Pneumatic Controller retrofits and replacements made pursuant to Section IV. A-5 and Section IV.C-4 and a performance optimization review made pursuant to Section VI of this Consent Decree.

WHEREAS, the North Hill Creek Compressor Station and the oil and natural gas operations of the Defendants are located on extremely remote areas of the Uinta Basin with access by unimproved roads with no utility services, and the Defendants have previously implemented conservation measures, such as conversion of high-bleed Pneumatic Controllers to

no or low-bleed controllers, plunger lifts, shale-plating of roads for dust control, comprehensive and full coverage 3-D seismic surveys to minimize surface disturbance by reducing dry holes, and practices and procedures for completing new wells to prevent or minimize the flaring and/or venting of natural gas;

WHEREAS, the United States, Wind River and Bill Barrett (the "Parties") recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and at arm's length, will avoid litigation among the Parties, and that this Consent Decree is consistent with the goals of the Act, and that its entry is in the best interests of the Parties and is in the public interest;

WHEREAS, the existing oil and natural gas production facilities subject to this Consent Decree are located exclusively on lands owned by the Ute Indian Tribe of the Uintah & Ouray Reservation and are associated with early-stage exploratory projects in an extremely remote area of the Reservation not served by utilities or paved roads.

WHEREAS, the existing oil and natural gas production facilities subject to the Consent Decree were installed after the summer of 2001, and in most cases are comprised of modern equipment as it relates to air emission standards.

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I (Jurisdiction and Venue), and with the consent of the Parties,

IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action and the Parties pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Sections 113(b), 167, and 304 of the Act, 42 U.S.C. §§ 7413(b), 7477, and 7604. Venue lies in this District pursuant to

Sections 113(b) and 304(c) of the Act, 42 U.S.C. §§ 7413(b) and 7604(c), and 28 U.S.C. §§ 1391(b) & (c) and 1395(a), because the violations in the Complaint are alleged to have occurred in, and the Defendants conduct business in, this judicial district. North Hill Creek Compressor Station is located on “Indian country” lands as defined at 18 U.S.C. § 1151 in Uintah County. For purposes of this Consent Decree, or any action to enforce this Consent Decree, the Defendants consent to and will not contest the jurisdiction of the Court over this matter. For purposes of this Consent Decree, while not admitting the allegations, the Defendants agree that the Complaint states claims upon which relief may be granted pursuant to Sections 113, 167, and 304(a) of the Act, 42 U.S.C. §§ 7413, 7477, and 7604(a).

II. APPLICABILITY

2. The obligations of this Consent Decree apply to and are binding upon the United States, and upon each Defendant, as defined herein, and its successors and assigns at the facilities listed in Appendix “A” for Wind River and in Appendix “B” for Bill Barrett.
3. Each Defendant shall ensure that any of its corporate subsidiaries or affiliates that now or in the future may operate any of the oil and/or natural gas production or gathering facilities located on Indian country in the State of Utah and subject to any work or compliance requirements of this Consent Decree, take all necessary and appropriate actions and provide EPA access to facilities, equipment, and information as may be required to enforce this Consent Decree so that each Defendant may fully and timely comply with all applicable requirements of this Consent Decree.
4. In any action to enforce this Consent Decree, neither Defendant shall raise as a defense the failure by any of its officers, directors, employees, agents, contractors, or

corporate affiliates or subsidiaries to take any actions necessary to comply with the applicable provisions of this Consent Decree.

III. DEFINITIONS

5. Terms used in this Consent Decree that are defined in the Act or in regulations promulgated pursuant to the Act shall have the meanings assigned to them in the Act or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

a. "Compression Facility" shall mean equipment related to increasing the pressure of natural gas in order to move natural gas from a well site or tank battery to a natural gas processing plant or sales pipeline. The compression facility does not include the equipment upstream of the compression facility.

b. "Consent Decree" or "Decree" shall mean this Consent Decree and all appendices attached hereto and listed in Section XXX.

c. "Day" shall mean a calendar day unless expressly stated to be a working day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.

d. "Hazardous Air Pollutants" or "HAPs" shall mean the chemical compounds listed in Section 112(b) of the Act. Only the HAP compounds listed in 40 C.F.R. Part 63, Subpart HH need to be considered when determining compliance for the sources subject to the NESHAPS for Oil and Natural Gas Production Facilities. Likewise, only the HAP compounds listed in 40 C.F.R. Part 63, Subpart ZZZZ need to be considered when determining compliance for

the sources subject to the NESHAPS for Reciprocating Internal Combustion Engines.

e. "Indian country" shall refer to the definition of "Indian country" at 18 U.S.C. § 1151,¹ including:

- (1) all land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation;
- (2) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; and
- (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

f. "Oil and Natural Gas Production Facility" shall mean an oil or gas exploration or production well and its associated equipment located upstream of compression facilities.

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

h. "Pneumatic Controller" shall mean a natural-gas driven pneumatic level controller.

¹ Consistent with federal case law, Indian country includes any lands held in trust by the United States for an Indian tribe.

- i. "Reciprocating Internal Combustion Engine" or "RICE" shall mean a stationary, immobile, natural gas-fired reciprocating internal combustion engine used in natural gas compression service.
- j. "Section" shall mean a portion of this Decree identified by a Roman numeral.
- k. "Title V Permit" shall mean a permit issued pursuant to the federal operating permit program established by Title V of the Act, 42 U.S.C. §§ 7661 - 7661f, and as implemented by 40 C.F.R. Parts 70 (applicable to states) or 71 (applicable to EPA).
- l. "TPY" shall mean tons per year.
- m. "VOCs" shall mean any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. This includes any such organic compound other than those listed in 40 CFR § 51.100(s)(1).

IV. EMISSION REDUCTION REQUIREMENTS

A. North Hill Creek Compressor Station Facility

- 6. Beginning on the Effective Date of this Consent Decree, Wind River is solely responsible for the emission reduction requirements set forth in Section IV.A. below at the North Hill Creek Compressor Station and associated wells on Indian country, which are listed in Appendix "A".

A-1. Dehydrators

7. The dehydrators at the North Hill Creek Compressor Station are subject to 40 C.F.R. Part 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil & Natural Gas Production Facilities.
8. Wind River shall operate the condenser and enclosed flare in combination that achieves a 95% by weight or greater reduction of VOC or total HAP emissions and in accordance with the requirements of 40 C.F.R. § 63.772(e).
9. Wind River shall operate the enclosed flare pursuant to the requirements of 40 C.F.R. § 63.11(b) and the manufacturer's written instructions or procedures.
10. Wind River shall operate and maintain the enclosed flare that shall be equipped with a thermocouple to detect the presence of a flame and a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame. If the pilot flame is not present for more than 5% of the total operating time during any calendar month Wind River shall submit a written report to EPA that provides the date and times that the pilot flame was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the pilot flame. Each report shall be postmarked by the 30th Day following the end of such calendar month.
11. Wind River shall inspect the enclosed flare daily and document whether the pilot light was lit or the enclosed flare was bypassed at the time of the inspection.
12. Wind River shall include all instances that a pilot light on the enclosed flare was not lit or the enclosed flare was bypassed, and the duration of each incident, in its Annual Report submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements).

A-2. Storage Tanks

13. Wind River shall continuously control emissions from the condensate, water and slop oil storage tanks using the existing enclosed flare located at the North Hill Creek Compressor Station. The enclosed flare shall meet the specification and operational requirements in Section IV. A-1 (Dehydrators) above.

A-3. Compressor Engines

14. The RICEs at the North Hill Creek Compressor Station are subject to 40 C.F.R. Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants from Stationary Reciprocating Internal Combustion Engines.

15. Wind River shall continuously operate the non-selective catalytic reduction (NSCR) control device and the air-fuel ratio (AFR) control device on each RICE at the North Hill Creek Compressor Station.

16. The NSCR control devices shall achieve a 76% destruction efficiency for Formaldehyde and meet a limit of 1.0 gram per horse power hour (gram/hp-hr) for NO_x and 2 g/hp-hr for CO, when the RICEs are operating at a 90% load or higher.

17. Wind River shall operate and maintain each RICE, NSCR and AFR control device according to all manufacturer's written instructions or procedures.

18. Each AFR control device shall be maintained per the manufacturer's recommendations, including replacement of the Oxygen sensor as necessary for Oxygen sensor-based controllers. In the absence of specific written manufacturer's recommendations, the Oxygen sensor shall be replaced quarterly (or within a 1500 hour operating period if the engine runs for less than 80% during the quarter). Records indicating the date and description of required maintenance shall be kept.

19. Wind River shall conduct annual performance tests for NO_x, CO and Formaldehyde using EPA Reference Methods in accordance with the Reference Method Test Protocol that shall be submitted to EPA at least 60 Days in advance of testing the RICE. The purpose of the testing is to determine continued performance of the NSCR and AFR control devices and compliance with the emission limitations in Paragraph 16. For additional tests performed using the same Reference Method Test Protocol, Wind River is not required to submit the Reference Method Test Protocol to EPA for approval.

20. Upon successful demonstration that the NSCR and AFR control devices have met the emission limits for NO_x in Paragraph 16, Wind River shall conduct emission tests for NO_x every 2190 run hours in accordance with the Portable Analyzer Test Protocol set forth in Appendix "D". The annual performance test may be performed in lieu of a single required portable analyzer test per year.

21. Wind River shall include all subsequent annual performance test results and portable analyzer test results in its Annual Report submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements). The report shall contain a NSCR control device maintenance log and an AFR control device maintenance log (e.g., date of last catalyst or Oxygen ("O₂") sensor replacement, number of engine operating hours since last such replacement(s), and date and description of any NSCR or AFR control device activities), as well as the information listed below for each applicable RICE:

- a. RICE make, model, nameplate hp rating, location, installation date, serial number and manufacturer emission data;
- b. NSCR and AFR control device make, model, installation date and manufacturer emission data;

- c. The inlet temperature and pressure drop across the NSCR;
- d. Annual emission test results including date and times of test runs, name(s) of employee(s) or contractor(s) who conducted the test, the NSCR outlet O₂, NO_x and CO g/hp-hr results, NO_x and CO concentration results after normalizing to a dry basis and to 15% Oxygen; and the NSCR inlet and outlet Formaldehyde concentration results normalized to a dry basis and 15% Oxygen for each run; the percent reduction for Formaldehyde achieved for each test-run; length of run-times, and percent engine load at each run;
- e. Portable analyzer test results including date and times of test runs, name(s) of employee(s) or contractor(s) who conducted the test, the NSCR outlet O₂, NO_x g/hp-hr results, NO_x concentration results after normalizing to a dry basis and to 15% Oxygen; length of run-times, and percent engine load at each run; and
- f. A certification pursuant to Paragraph 140 of the information contained in the report required by this Section in accordance with Section XIII (Recordkeeping and Reporting Requirements).

A-4. Periods of Startup, Shutdown, Malfunction and Maintenance

22. The provisions of 40 CFR § 63.762 shall apply to all periods of startup, shutdown, malfunction and non-operation of affected sources that are subject to 40 C.F.R. Part 63, Subpart HH. The provisions of 40 CFR § 63.6(f)(1) shall apply to all periods of startup, shutdown and malfunction and non-operation of affected sources that are subject to 40 C.F.R. Part 63, Subpart ZZZZ.

A-5. Pneumatic Controllers

23. Retrofit or Replacement. Wind River shall retrofit or replace all “high-bleed” Pneumatic Controllers at the North Hill Creek Compressor Station, which are listed in

Appendix "C", with "low-bleed" actuators. For purposes of this Consent Decree, a "high-bleed" Pneumatic Controller is any pneumatic control device that has the capacity to bleed in excess of 6 standard cubic feet of natural gas per hour (i.e., 50,000 scf/year) in normal operation, and a "low-bleed actuator" is a pneumatic control device that bleeds natural gas at a lesser rate than a "high-bleed" Pneumatic Controller. During the retrofit/replacement project, Wind River shall, to the extent practicable, repair or replace leaking gaskets, tubing fittings, and seals, and all work will be completed so as to minimize potential emissions associated with the retrofit/replacement project.

24. By no later than six months after the Effective Date of this Consent Decree, Wind River shall have installed "low-bleed" actuators on at least one-half of the "high-bleed" Pneumatic Controllers listed in Appendix "C".

25. By no later than one year after the Effective Date of this Consent Decree, Wind River shall have installed "low-bleed" actuators on the remainder of the "high-bleed" Pneumatic Controllers listed in Appendix "C".

26. Within 60 Days after the retrofit/replacement project is completed, Wind River shall submit a report to EPA that certifies the completion of the project, and an accompanying spreadsheet in the format specified in Appendix "C", that identifies each unit retrofitted or replaced, its site location, its service, the date the retrofit or replacement was completed, and estimated bleed-rate reductions and corresponding estimates of both annual VOC reductions and amount of natural gas conserved, and the approximate cost of each retrofit or replacement.

A-6. Permitting Requirement

27. By no later than 90 Days after the Effective Date of this Consent Decree, Wind River shall submit applications for all required federally-enforceable, new source review

("NSR") permit authorizations consistent with the Potential-To-Emit ("PTE") limitations specified in Section V of this Consent Decree and amend the existing Title V Permit application for the North Hill Creek Compressor Station, as appropriate, to incorporate all installation, operation, monitoring and reporting requirements set forth in Section IV of this Consent Decree. Section V of this Consent Decree establishes federally enforceable PTE limitations for the North Hill Creek Compressor Station to below the PSD permitting thresholds of the Clean Air Act.

A-7. General Recordkeeping Requirement

28. Wind River shall maintain records and information adequate to demonstrate compliance with the requirements of Section IV of this Consent Decree, and shall report the status of compliance with these requirements in the Annual Reports submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements). In addition, Wind River shall submit all applicable reports as required under MACT HH and MACT ZZZZ.

A-8 General Pollution Control Requirement

29. All emission capture, collection and pollution abatement equipment, including vent lines, connections, fittings, valves, relief valves, hatches and other appurtenances required at the North Hill Creek Compressor Station in Section IV. A. must be maintained in good working order and operated properly at all times that the facility is operated except as provided in Paragraph 22.

B. New Compression Facilities

30. Beginning on the Effective Date of this Consent Decree, unless otherwise specified, Wind River and Bill Barrett shall comply with the emission reduction

requirements set forth in Section IV.B. at each new compression facility located on Indian country in the State of Utah that is operated by that Defendant. Each Defendant shall be responsible only for a new compression facility that such Defendant operates.

B-1. Dehydrators

31. Each Defendant shall install and operate only enclosed flares that achieve a 95% by weight or greater reduction of VOC or total HAP emissions from each dehydrator at each new compression facility that such Defendant operates.

32. Each Defendant shall operate such enclosed flares pursuant to the requirements of 40 C.F.R. § 63.11(b) and the manufacturer's written instructions or procedures.

33. Each Defendant shall submit to EPA, by no later than 60 Days after installing such an enclosed flare, a worksheet setting forth the design calculations for each enclosed flare, including heat content determination, exit velocity determination, and flow rate estimates.

34. Upon startup of such an enclosed flare, the flare shall be equipped with a thermocouple or equivalent device to detect the presence of a flame and a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame. If the pilot flame is not present for more than 5% of the total operating time during any calendar month, the Defendant operating such flare shall submit a written report to EPA that provides the date and times that the pilot flame was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the pilot flame. Each report shall be postmarked by the 30th Day following the end of such calendar month.

35. No later than 60 Days following the start-up of such an enclosed flare, the Defendant operating such flare shall submit to EPA a certification pursuant to Paragraph

140 stating whether such Defendant has complied with the requirements of Paragraphs 31, 32 & 34.

36. Each Defendant shall daily inspect such enclosed flare and document whether the flare pilot light on such enclosed flare was lit or the enclosed flare was bypassed at the time of the inspection.

37. Each Defendant shall include all instances that a pilot light on such an enclosed flare was not lit or the enclosed flare was bypassed, and the duration of each incident, in its Annual Report submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements).

38. Instead of designing, operating, maintaining, and monitoring an enclosed flare in accordance with the applicable requirements of this Section IV.B. of this Consent Decree, each Defendant may elect to control emissions from dehydrators at new compression facilities that it operates by installing and operating a Vapor Recovery Unit (VRU) or any other system to capture and beneficially use or prevent VOC or total HAP emissions from the dehydrators. No later than 30 Days prior to installation, each Defendant shall submit to EPA a monitoring plan to ensure the non-flare alternative meets a 95% by weight or greater reduction in VOC or total HAP emissions.

B-2 Storage Tanks

39. Each Defendant shall continuously control emissions from condensate, water and slop oil storage tanks at a new compression facility that such Defendant operates by using an enclosed flare that meets the requirements specified in Section IV. B-1 (Dehydrators) above.

40. Instead of designing, operating, maintaining, and monitoring an enclosed flare in accordance with the applicable requirements of Section IV. B-1, each Defendant may

elect to control emissions from condensate tanks that it operates by installing and operating a VRU or any other system to capture and beneficially use or prevent VOC emissions. No later than 30 Days prior to installation, each Defendant shall submit to EPA an monitoring plan to ensure the non-flare alternative meets a 95% by weight or greater reduction in VOC or total HAP emissions.

41. No later than 60 Days after controlling tank emissions, each Defendant shall submit a certification to EPA pursuant to Paragraph 140 stating whether such Defendant has complied with the requirements of Paragraph 39.

B-3. Engines

42. Each rich-burn and lean-burn RICE with a nameplate rating of 500 hp or greater at a new compression facility shall be operated with emissions controls (AFR and NSCR control devices for rich-burn engines and oxidation catalysts for lean-burn engines) and each engine shall not exceed emission standards of 1.0 g/hp-hr NO_x and 2.0 g/hp-hr CO when operating at 90% load or higher.

43. For each rich-burn engine with a nameplate rating of 500 hp or greater, the Defendant operating such engine shall comply with the following:

- a. The NSCR control device required to be installed on a RICE shall achieve at least a 76% destruction efficiency for Formaldehyde emissions when each RICE is operating at a 90% load or higher;

- b. Each engine and catalyst shall be operated and maintained according to the manufacturer's written instructions or procedures necessary to achieve the destruction efficiency as specified in Paragraph 43(a) and the emission limits specified in Paragraph 42;
- c. Each AFR control device shall be maintained per the manufacturer's recommendations, including replacement of the Oxygen sensor as necessary for Oxygen sensor-based controllers. In the absence of specific written manufacturer's recommendations, the Oxygen sensor shall be replaced quarterly (or within a 1500 hour operating period if the engine runs for less than 80% during the quarter);
- d. Records indicating the date and description of required maintenance shall be kept;
- e. Initial Tests shall be conducted for NO_x, CO and Formaldehyde using EPA Reference Methods in accordance with the Reference Method Test Protocol submitted to EPA no later than 60 Days prior to the first testing on such engine. Testing shall be performed within 90 Days of startup and annually thereafter to determine continued performance of the catalyst and compliance with the emission limitations in Paragraph 42. For additional tests performed using the same Reference Method Test Protocol, the Defendant is not required to submit the Reference Method Test Protocol to EPA for approval;
- f. The catalyst inlet gas temperature shall be monitored and recorded weekly. The inlet temperature shall be within the manufacturer's recommended range. If the temperature is outside of the manufacturer's recommended range,

necessary maintenance or adjustments shall be performed. Records of the data and any maintenance or adjustment shall be maintained for inspection upon request; and

g. The pressure-drop across the catalyst bed shall be recorded monthly. The monthly pressure drop values must be within +/- 2 inches of water column of the most recent passing performance test pressure drop value under operating conditions within 10% of the engine-load during the previous performance test. If the pressure drop value is out-of-range, corrective action shall be taken and documented.

44. For each lean-burn engine with a nameplate rating of 500 hp or greater, the Defendant operating such engine shall comply with the following:

a. For a 4-stroke lean-burn ("4-SLB") engine, the oxidation catalysts that are required to be installed shall achieve at least a 93% destruction efficiency for CO when each RICE is operating at a 90% load or higher or (2) for a 2-stroke lean-burn ("2-SLB") engine, the oxidation catalysts that are required to be installed shall achieve at least a 58% destruction efficiency for CO when each RICE is operating at a 90% load or higher;

b. Each engine and catalyst shall be operated and maintained according to the manufacturer's written instructions or procedures necessary to achieve the destruction efficiency as specified in Paragraph 44(a) and the emission limits listed in Paragraph 42;

c. By no later than 90 Days following the installation of a new catalyst controlled RICE, an Initial Test of such catalyst to demonstrate compliance with

the destruction efficiency in Paragraph 44(a) and the emission limits in Paragraph 42 must be performed in accordance with either EPA Reference Methods in accordance with the Reference Methods Test Protocol that shall be submitted to EPA at least 60 Days in advance of the first test or tested in accordance with the Portable Analyzer Test Protocol set forth in Appendix "D". For additional tests using the same EPA Reference Method Test Protocol or the Portable Analyzer Test Protocol set forth in Appendix "D", the Defendant is not required to submit the Test Protocol to EPA for approval;

d. If the catalyst fails to meet the destruction efficiency as specified in Paragraph 44(a) or the emission limits specified in Paragraph 42, each Defendant operating such equipment shall take appropriate steps to correct such non-compliance and retest the oxidation catalyst within 60 Days after the Initial Test. Each Defendant operating such equipment shall submit a report to EPA no later than 60 Days after each retest. The retest report shall include a summary of the steps taken to comply and the retest results; and

e. Upon successful demonstration that the catalyst has met the destruction efficiency specified in Paragraph 44(a) and the emission limits specified in Paragraph 42, the Defendant operating such equipment shall thereafter test the oxidation catalyst emission control efficiency on a semi-annual calendar-year basis in accordance with an EPA Reference Method Test Protocol submitted to EPA no later than 60 Days prior to testing or the Portable Analyzer Test Protocol set forth in Appendix "D". For additional tests using the same EPA Reference Method Test Protocol or the Portable Analyzer Test Protocol set forth in

Appendix "D", the Defendant is not required to submit the Test Protocol to EPA for approval.

45. For each rich-burn or lean-burn RICE with a nameplate rating of 500 hp or greater, each Defendant shall submit a report to EPA within 60 Days after each Initial Test is performed. The report shall contain the emission test results and the following information applicable to each RICE:

- a. RICE make, model, nameplate hp rating, location, serial number, installation date and manufacturer emission data;
- b. Catalyst make, model, installation date and manufacturer emission data;
- c. Initial Test results including date and times of test runs, name(s) or employee(s) or contractor(s) who conducted the test; for both rich-burn and lean-burn the NO_x and CO emissions in g/hp-hr, NO_x and CO concentration results after normalizing to a dry basis and to 15% Oxygen; for lean-burn engines, O₂ and CO concentration results at the inlet and outlet of the oxidation catalyst for each run, the percent reduction of CO achieved for each test run after normalizing CO concentration to a dry basis and to 15% Oxygen; and for rich-burn engines, the NSCR outlet O₂, the Formaldehyde concentration results at the inlet and outlet of the NSCR control device, after normalizing to a dry basis and 15% Oxygen, for each test run and percent reduction achieved per run, length of run-times, and percent engine load at each run; and

d. A certification pursuant to Paragraph 140 as it pertains to the information contained in the report required by this Section and in accordance with Section XIII (Recordkeeping and Reporting Requirements).

46. For each rich-burn or lean-burn RICE with a nameplate rating of 500 hp or greater, each Defendant operating such equipment shall submit in an Annual Report pursuant to Section XIII (Recordkeeping and Reporting Requirements) information regarding all subsequent semi-annual test results (for lean-burn) or annual test results (for rich-burn) as well as the applicable information gathered pursuant to Paragraphs 43 and 44, and a catalyst and AFR Control device maintenance log (e.g., date of last catalyst replacement, number of engine operating hours since last catalyst or O₂ sensor replacement, and date and description of any catalyst or AFR Control device maintenance activities).

B-4. Periods of Startup, Shutdown, Malfunction and Maintenance

47. The emission reduction requirements specified in Section IV.B. do not apply during periods of startup, shutdown, malfunction and maintenance at new compression facilities that are not subject to 40 C.F.R. Part 63, Subpart HH and Subpart ZZZZ, as determined by the PTE provisions in Section V of this Consent Decree. The provisions of 40 CFR § 63.762 shall apply to all periods of startup, shutdown, malfunction and non-operation of affected sources that are subject to 40 C.F.R. Part 63, Subpart HH. The provisions of 40 CFR § 63.6(f)(1) shall apply to all periods of startup, shutdown and malfunction and non-operation of affected sources that are subject to 40 C.F.R. Part 63, Subpart ZZZZ.

B-5. Pneumatic Controllers

48. Each Defendant shall install and operate “low-bleed” or “no-bleed” actuators to reduce emissions of natural gas from Pneumatic Controllers at new compression facilities that it operates where instrument-air is not otherwise available. Each Defendant need not install “low-bleed” or “no-bleed” actuators if such Defendant can demonstrate that the use of “low-bleed” or “no-bleed” pneumatic devices would not be technically or operationally feasible.

B-6. Permitting Requirement

49. If otherwise required by applicable regulations implementing the Act, each Defendant shall apply for required permits for any new dehydrator, storage tank or RICE subject to Section IV. B. prior to Termination of this Consent Decree.

B-7. General Recordkeeping Requirement

50. Each Defendant shall maintain records and information for the facilities that it operates that are adequate to demonstrate its compliance with the requirements of Section IV.B. of this Consent Decree and shall report the status of its compliance with these requirements in its Annual Reports submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements).

B-8. General Pollution Control Requirement

51. All emission capture, collection and pollution abatement equipment, including vent lines, connections, fittings, valves, relief valves, hatches and other appurtances required at New Compression Facilities in Section IV.B. must be maintained in good working order and operated properly at all times that the facility is operated except as provided by Paragraph 47.

C. Existing Oil and Natural Gas Production Facilities

52. Beginning on the Effective Date of this Consent Decree, unless otherwise specified, Wind River and Bill Barrett shall comply with the emission reduction requirements set forth in Section IV.C. below at each existing oil and natural gas production facility located on Indian country in the State of Utah that is operated by that Defendant. Each Defendant shall be responsible only for applicable emission reduction requirements at each existing oil and natural gas production facility that such Defendant operates and is listed in Appendix "A" and "B".

C-1. Dehydrators

53. Within 90 Days of the Effective Date of this Consent Decree, each Defendant shall install and operate enclosed flares that achieve a 95% by weight or greater reduction of VOC or total HAP emissions from each dehydrator with uncontrolled annual VOC emissions from reboiler still vents, glycol flash separators, and still vent condensers in excess of 20.0 tons per year ("TPY"), rounded to the nearest 0.1 ton, at each existing oil and natural gas production facility it operates. If actual annual average throughput to a unit equals or exceeds 3.0 MMscfd and actual benzene emissions from the unit is equal to or greater than 1.0 TPY considering controls, the unit is an affected unit under 40 CFR part 63, subpart HH for Oil and Natural Gas Area Production Facilities and the responsible Defendant must comply with the applicable provisions of the rule. The uncontrolled VOC emissions analysis shall be determined by using GRI GLYCalc version 4.0 or higher with:

- a. the results of a recent extended gas analysis from a representative site-specific sample of the stream entering the natural gas dehydrator contactor tower;

- b. the maximum lean glycol recirculation rate for the glycol circulation pump in use (redundant pumps may be present in the system provided: i) the evaluation is performed using the maximum circulation rate of the largest volume pump; and ii) only one pump may operate at any one time (if the maximum circulation rate for the pump in use is not included in the GRI GLYCalc User Manual then documentation must be provided to EPA upon request); and
- c. the average operational parameters including wet gas temperature and pressure, dry gas water content, glycol flash separator temperature and pressure, stripping gas source and rate, and average daily gas production.

The average daily gas production shall be determined based on actual gas production for the twelve month period prior to the month of the Effective Date of this Consent Decree as reported to the Utah Division of Oil and Gas and Mining (DOG M) or equivalent agency with jurisdiction.

54. Each dehydrator shall be controlled for a minimum of twelve months, after which time the control system or device may be removed without prior EPA approval provided, within 30 days of removal, the Defendant notifies EPA in writing of the removal date and submits information demonstrating that the uncontrolled, annualized VOC emission rate is less than 5 TPY. The submittal to EPA will include the calculations of VOC emissions rate using the method of calculation described in Paragraph 53 (with the exception that the operating and production data used in the model be the annual average of the most recent twelve month period following at least twelve months of operation with controls.

55. When controls are required, each Defendant shall operate enclosed flares at its existing oil and natural gas production facilities pursuant to the requirements of 40 C.F.R. § 63.11(b) and the manufacturer's written instructions or procedures.

56. Each Defendant shall submit to EPA, by no later than 60 Days after installing such an enclosed flare, a worksheet setting forth the design calculations for that enclosed flare, including heat content determination, exit velocity determination, and flow rate estimates.

57. Upon startup of an enclosed flare, the flare shall be equipped with a thermocouple or equivalent device to detect the presence of a flame and a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame. If the pilot flame is not present for more than 5% of the total operating time during any calendar month, the Defendant operating such flare shall submit a written report to EPA that provides the date and times that the pilot flame was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the pilot flame. Each report shall be postmarked by the 30th Day following the end of such calendar month.

58. No later than 60 Days following the start-up of such an enclosed flare, the Defendant shall submit a certification pursuant to Paragraph 140 to EPA stating whether such Defendant has complied with the requirements of Paragraphs 53, 55, and 57.

59. Each Defendant shall inspect during routine well-site visits, such an enclosed flare at its existing oil and natural gas production facilities and document whether pilot light on the enclosed flare was lit or such enclosed flare was bypassed at the time of the inspection.

60. Each Defendant shall include all instances that a pilot light on such enclosed flares was not lit or such enclosed flares were bypassed, and the duration of each incident, in its Annual Report submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements).

61. Instead of designing, operating, maintaining, and monitoring an enclosed flare in accordance with the applicable requirements of this Section IV.C. of this Consent Decree, each Defendant may elect to control emission from dehydrators it operates by installing and operating a VRU or any other system to capture and beneficially use or prevent VOC emissions from the dehydrators. No later than 30 Days prior to installation, such Defendant shall submit to EPA a monitoring plan to ensure the non-flare alternative meets an 95% by weight or greater reduction in VOC or total HAP emissions.

C-2 Condensate/Crude Oil Storage Tanks

62. Beginning 90 Days after the Effective Date of this Consent Decree, each Defendant shall continuously control emissions from condensate or crude oil storage tanks at existing oil and natural gas production facilities that such Defendant operates when the following conditions trigger the control requirement. For condensate (API Gravity of 40 degrees or greater) tanks, controls are required when the tank battery throughput exceeds an average daily throughput of 14 bbl/day. For crude oil (API gravity is less than 40 degrees) tanks, controls are required when the tank battery throughput exceeds an average daily throughput of 60 bbl/day. The average daily condensate or crude oil production shall be determined based on actual production for the twelve month period prior to the month of the Effective Date of the Consent Decree as reported to the Utah DOGM or equivalent agency with jurisdiction.

63. Where controls are required, each Defendant shall continuously control emissions from the condensate or crude oil storage tanks using an enclosed flare that meets the requirements under Section IV. C-1 (Dehydrators) above.

64. Instead of designing, operating, maintaining, and monitoring an enclosed flare in accordance with the applicable requirements of Section IV. C. of this Consent Decree, each Defendant may elect to control emissions from condensate tanks that such Defendant operates by installing and operating a VRU or any other system to capture and beneficially use or prevent VOC emissions. No later than 30 Days prior to installation, such Defendant shall submit to EPA a monitoring plan to ensure the non-flare alternative meets a 95% by weight or greater reduction in VOC or total HAP emissions.

65. No later than 60 Days after controlling the tank emissions, each Defendant shall submit a certification to EPA pursuant to Paragraph 140 stating whether such Defendant has complied with the requirements of Paragraphs 62 & 63 at existing oil and natural gas production facilities it operates.

66. Vapors from the condensate or crude oil storage tanks, including tank flash and standing working breathing vapors, that are required to be controlled under Paragraph 62 shall be controlled for at least twelve months after which time the control may be removed without prior EPA approval provided, within 30 Days of the removal, the Defendant notifies EPA in writing of the removal date and submits information demonstrating that the uncontrolled, annualized VOC emission rate is less than 10 TPY. The submittal to EPA will include the calculations of VOC emission rate using the following method of calculation: use an approved flashing emissions model or actual measurements to determine actual average annual emissions. Input for the approved

flashing model must include: the annual average daily production based on the twelve-month period of actual production as reported to the Utah DOGM or equivalent agency with jurisdiction following operation for at least twelve months with controls; a site specific extended hydrocarbon analysis of pressurized condensate/oil sampled at the outlet of the separator or treater and upstream of the atmospheric storage tanks sampled at the operating conditions of the separator or treater to obtain an "unflashed" condensate/oil sample; the actual operational parameters of the separation and storage equipment at the time the sample was collected and the decanes molecular weight and specific gravity. In addition an unpressurized sample of the sales condensate or crude oil is to be collected and analyzed for Reid Vapor Pressure and API Specific Gravity. Defendant shall use API E&P Tank Version 2.0 for condensates or crude oils with API gravities in excess of 40 degrees. For Crude oils with API gravities 40 degrees or less, use the Vasquez-Beggs GOR (VB) correlation to estimate flashing emissions and EPA Tanks 4 program to calculate standing working and breathing emissions. Flashing emissions, especially those from pressurized vessels, may also be determined through direct measurement and analysis of the vapors when routing all the tank vapors through a calibrated meter.

C-3 Periods of Startup, Shutdown, Malfunction and Maintenance

67. The emission reduction requirements specified in Section IV.C. do not apply during periods of startup, shutdown, malfunction and maintenance at existing oil and natural gas production facilities that are not subject to 40 C.F.R. Part 63, Subpart HH, as determined by the PTE provisions in Section V of this Consent Decree. The provisions of 40 CFR § 63.762 shall apply to all periods of startup, shutdown, malfunction and non-operation of affected sources that are subject to 40 C.F.R. Part 63, Subpart HH.

C-4. Pneumatic Controllers

68. Retrofit or Replacement. Each Defendant shall retrofit or replace all “high-bleed” Pneumatic Controllers listed in Appendix “C” with “low-bleed” actuators at existing oil and natural gas production facilities in accordance with the definitions of high-bleed and low-bleed as presented in Paragraph 23. During the performance of the retrofit/replacement project, each Defendant shall, to the extent practicable, repair or replace leaking gaskets, tubing fittings, and seals, and all work will be completed so as to minimize potential emissions associated with the retrofit/replacement project.

69. By no later than six months after the Effective Date of this Consent Decree, each Defendant shall install “low-bleed” actuators on at least one-half of the “high-bleed” Pneumatic Controllers at existing oil and natural gas production facilities that such Defendant operates.

70. By no later than one year after the Effective Date of this Consent Decree, each Defendant shall install “low-bleed” actuators on the remainder of the “high-bleed” Pneumatic Controllers at existing oil and natural gas production facilities that such Defendant operates.

71. Within 60 Days after the retrofit/replacement project is completed, each Defendant shall provide a report to EPA that certifies completion of the retrofit/replacement project at existing oil and natural gas production facilities, and an accompanying spreadsheet in the format set forth in Appendix “C”, that identifies each unit retrofitted or replaced, its site location, its service, the date the retrofit or replacement was completed, the estimated bleed rate reductions and corresponding estimates of both annual VOC reductions and amount of natural gas conserved, and the approximate cost of each retrofit or replacement.

C-5. General Recordkeeping Requirement

72. Each Defendant shall maintain records and information adequate to demonstrate its compliance with the applicable requirements of Section IV.C of this Consent Decree, and shall report the status of its compliance with these requirements in its Annual Reports submitted pursuant to Section XIII (Recordkeeping and Reporting Requirement).

C-6 General Pollution Control Requirement

73. All emission capture, collection and pollution abatement equipment, including vent lines, connections, fittings, valves, relief valves, hatches and other appurtances required at Existing and Oil and Natural Gas Production Facilities in Section IV.C. must be maintained in good working order and operated properly at all times that the facility is operated, except as provided in Paragraph 67.

D. New Oil and Natural Gas Production Facilities

74. Beginning on the Effective Date of this Consent Decree, unless otherwise specified, Wind River and Bill Barrett shall comply with the emission reduction requirements set forth in Section IV.D. at each new oil and natural gas production facility located on Indian country in the State of Utah that is operated by that Defendant. Each Defendant shall be responsible only for applicable emission reduction requirements at a new oil and natural gas production facility that such Defendant operates.

D-1. Dehydrators

75. Each Defendant shall install and operate enclosed flares that achieve a 95% by weight or greater reduction of VOC or total HAP emissions from each dehydrator with uncontrolled annual VOC emissions from reboiler still vents, glycol flash separators, and still vent condensers in excess of 20.0 TPY, rounded to the nearest 0.1 ton, at new oil and/or gas production facilities that it operates. If actual annual average throughput to

the unit equals or exceeds 3.0 MMscfd and actual benzene emissions from the unit is equal to or greater than 1.0 TPY considering controls, the unit is an affected unit under 40 CFR part 63, subpart HH for Oil and Natural Gas Area Production Facilities and the responsible Defendant must comply with the applicable provisions of the rule. The uncontrolled VOC emissions analysis shall be determined by using GRI GLYCalc version 4.0 or higher with:

- a. the results of a recent extended gas analysis from a representative site-specific sample of the stream entering the natural gas dehydrator contactor tower;
- b. the maximum lean glycol recirculation rate for the glycol circulation pump in use (redundant pumps may be present in the system provided: i) the evaluation is performed using the maximum circulation rate of the largest volume pump; and ii) only one pump may operate at any one time) (if the maximum circulation rate for the pump in use is not included the GRI GLYCalc User Manual then documentation must be provided to EPA upon request); and
- c. the average operational parameters including wet gas temperature and pressure; dry gas water content; glycol flash separator temperature and pressure; stripping gas source and rate; and average daily gas production.

The average daily gas production shall be calculated as follows: calculate the average daily production for the first thirty (30) operating Days following the first date of production (total gas produced in first thirty (30) operating Days divided by 30 days). If VOC emissions meet or exceed the threshold, controls must be installed within 120 Days of the first date of production.

76. When controls are required, each Defendant shall operate enclosed flares pursuant to the requirements of 40 C.F.R. § 63.11(b) and the manufacturer's written instructions or procedures.

77. Each Defendant shall submit to EPA, by no later than 60 Days after installing such an enclosed flare, a worksheet setting forth the design calculations, including heat content determination, exit velocity determination, and flow rate estimates.

78. Each enclosed flare shall be equipped with a thermocouple or equivalent device to detect and a continuous recording device, such as a chart recorder or similar device, to document the presence of a flame. If the pilot flame is not present for more than 5% of the total operating time during any calendar month, the Defendant operating such flare shall submit a written report to EPA that provides the date and times that the pilot flame was not present and the corrective actions taken or the preventative measures adopted to increase the operating time of the pilot flame. Each report shall be postmarked by the 30th Day following the end of such calendar month.

79. No later than 60 Days following the start-up of such an enclosed flare, the Defendant shall submit a certification to EPA pursuant to Paragraph 140 stating whether such Defendant has complied with the requirements of Paragraphs 75, 76 & 78.

80. Each Defendant shall inspect during routine site visits such enclosed flare it operates and document whether the pilot light on the enclosed flare was lit or the enclosed flare was bypassed at the time of the inspection.

81. Each Defendant shall include all instances that a pilot light on such an enclosed flare was not lit or the enclosed flare was bypassed, and the duration of each incident, in

its Annual Report submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements).

82. Instead of designing, operating, maintaining, and monitoring an enclosed flare in accordance with the applicable requirements of Section IV.D. of this Consent Decree, the Defendant may elect to control emissions from dehydrators at new oil and natural gas production facilities that it operates by installing and operating a VRU or any other system to capture and beneficially use or prevent VOC emissions from the dehydrators. No later than 30 Days prior to installation, the Defendants operating such equipment shall submit to EPA a monitoring plan to ensure the non-flare alternative meets an 95% or greater reduction in VOC emissions.

83. Each dehydrator that is required to be controlled under Paragraph 75 shall be controlled for a minimum of twelve months, after which time the control system or device may be removed without prior EPA approval provided, within 30 days of removal, the Defendant notifies EPA in writing of the removal date and submits information demonstrating that the uncontrolled, annualized VOC emission rate is less than 5 TPY. The submittal to EPA shall include the calculations of VOC emission rate using the method of calculation described in Paragraph 75 (with the exception that the operating and production data used in the model be the annual average of the most recent twelve month period following at least One Year of operation with controls).

D-2. Condensate/Crude Oil Storage Tanks

84. Each Defendant shall continuously control emissions from such tanks that it operates, within 90 Days of first production, when the following conditions are met: For condensate (API Gravity of 40 degrees or greater) tanks, controls are required when the tank battery throughput exceeds a projected average daily throughput of 14 bbl/day. For

crude oil (API gravity is less than 40 degrees) tanks, controls are required when the tank battery throughput exceeds a projected average daily throughput of 60 bbl/day. The projected average daily throughput shall be calculated as follows: calculate the average daily production for the first thirty (30) operating Days following the first date of production of oil or condensate (total bbl produced in first thirty operating Days divided by 30 days).

85. Where controls are required, each Defendant shall continuously control VOC emissions from the condensate or crude oil storage tanks it operates by using an enclosed flare that meets the requirements under Section IV.D-1 (Dehydrators) above.

86. Instead of designing, operating, maintaining, and monitoring an enclosed flare in accordance with the applicable requirements of this Section IV.D, a Defendant may elect to control emission from condensate tanks at new oil and/or gas production facilities that such Defendant operates by installing and operating a VRU or any other system to capture and beneficially use or prevent VOC emissions from the dehydrators. No later than 30 Days prior to installation, the Defendant shall submit to EPA a monitoring plan to ensure the non-flare alternative meets an 95% or greater reduction in VOC emissions.

87. No later than 60 Days after controlling the tank emissions, each Defendant shall submit a certification to EPA pursuant to Paragraph 140 stating whether such Defendant has complied with the requirements of Paragraphs 84 & 85.

88. Vapors from the condensate or crude oil storage tanks, including tank flash and standing working breathing vapors, that are required to be controlled under Paragraph 84 shall be controlled for at least twelve months, after which time the control may be removed without prior EPA approval provided, within 30 days of removal, the Defendant

operating such controls notifies EPA in writing of the removal date and demonstrates that the uncontrolled, annualized VOC emission rate is less than 10 TPY. The submittal to EPA shall include the calculations of VOC emission rate using the following method of calculation: use an approved flashing emissions model or actual measurements to determine actual average annual emissions. Input for the approved flashing model must include: the annual average daily production based on the twelve months actual production as reported to the Utah DOGM or equivalent agency with jurisdiction following operation for at least twelve months with controls; a site specific extended hydrocarbon analysis of pressurized condensate/oil sampled at the outlet of the separator or treater and upstream of the atmospheric storage tanks sampled at the operating conditions of the separator or treater to obtain an "unflashed" condensate/oil sample; the actual operational parameters of the separation and storage equipment at the time the sample was collected and the decanes molecular weight and specific gravity. In addition an unpressurized sample of the sales condensate or crude oil is to be collected and analyzed for Reid Vapor Pressure and API Specific Gravity. Use API E&P Tank Version 2.0 or higher for condensates or crude oils with API gravities in excess of 40 degrees. For crude oils with API gravities 40 degrees or less use the Vasquez-Beggs GOR (VB) correlation to estimate flashing emissions and EPA Tanks 4 program to calculate standing working and breathing emissions. Flashing emissions, especially those from pressurized vessels, may also be determined through direct measurement and analysis of the vapors when routing all the tank vapors through a calibrated meter.

D-3. Periods of Startup, Shutdown, Malfunction and Maintenance

89. The emission reduction requirements specified in Section IV.D. do not apply during periods of startup, shutdown, malfunction and maintenance at a new oil and

natural gas production facility that is not subject to 40 C.F.R. Part 63, Subpart HH, as determined by the PTE provisions in Section V of this Consent Decree. The provisions of 40 C.F.R. § 63.762 shall apply to all periods of startup, shutdown, malfunction and non-operation of affected sources that are subject to 40 C.F.R. Part 63, Subpart HH.

D-4. Pneumatic Controllers

90. Each Defendant shall install and operate only “low-bleed” and “no-bleed” controllers to reduce emissions of natural gas from Pneumatic Controllers at new oil and/or gas production facilities that it operates, where instrument air is not otherwise available. The Defendant need not, however, install “low-bleed” or “no-bleed” controllers if the Defendant can demonstrate that the use of “low-bleed” or “no-bleed” pneumatic devices would not be technically or operationally feasible.

D-5. General Record Keeping Requirement

91. Each Defendant shall maintain records and information adequate to demonstrate compliance with the applicable requirements of Section IV.D. of this Consent Decree, and shall report the status of its compliance at new oil and/or gas production facilities it operates with the requirements of Section IV.D. of this Consent Decree and shall report the status of its compliance with these requirements in its Annual Reports submitted pursuant to Section XIII (Recordkeeping and Reporting Requirements).

D-6. General Pollution Control Requirements

92. All emission capture, collection and pollution abatement equipment, including vent lines, connections, fittings, valves, relief valves, hatches and other appurtenances required at New Oil and Natural Gas Production Facilities in Section IV.D. must be maintained in good working order and operated properly at all times that the facility is operated except as provided in Paragraph 89.

V. LIMITS ON POTENTIAL TO EMIT

93. Subject to the requirements in Section IV.A. (North Hill Creek Compressor Station), Section IV.B. (New Compression Facilities), Section IV.C. (Existing Oil and Natural Gas Production Facilities), and Section IV.D. (New Oil and Natural Gas Production Facilities) for all permitting and expansion purposes, the emissions limits established in Section V of this Consent Decree shall be considered “federally enforceable” or “practicably enforceable” for purposes of calculating the PTE of a source or facility as may be applicable under the Clean Air Act.

94. The PTE for VOCs and total HAP emissions from dehydrators, installed and certified pursuant to this Consent Decree, shall be limited by and federally enforceable on the basis that such emissions meet the criteria set forth in Section IV.A-1 (North Hill Creek Compressor Station), Section IV.B-1 (New Compression Facilities), Section IV.C-1 (Existing Oil and Natural Gas Production Facilities), and Section IV.D-1 (New Oil and Natural Gas Production Facilities).

95. The PTE for VOC and total HAP emissions from condensate storage tanks shall be limited by and federally enforceable on the basis that such emissions will be controlled by an enclosed flare, VRU, or other non-flare alternative that meet the applicable provisions in Section IV.A-2 (North Hill Creek Compressor Station), Section IV.B-2 (New Compression Facilities), Section IV.C-2 (Existing Oil and Natural Gas Production Facilities), and Section IV.D-2. (New Oil and Natural Gas Production Facilities).

96. The PTE for NO_x and CO emissions for each lean-burn RICE with a nameplate rating of 500 hp or greater shall be limited by and federally enforceable on the basis that such emissions will be controlled by oxidation catalysts which meet a destruction efficiency for CO of at least 93% for 4-stroke lean-burn (SLB) or at least 58% for 2-SLB

when operating at 90% load or higher. In addition, the lean-burn engine and oxidation catalyst must control emissions to a level not to exceed 1.0 g/hp-hr NOx and 2.0 g/hp-hr CO when the engine is operated at 90% load or higher, provided the criteria set forth in Section IV.B-3 are met.

97. The PTE for NOx, CO, and Formaldehyde emissions for all rich-burn engines of 500 hp or greater shall be limited by and federally enforceable on the basis that such emissions will be controlled by AFR and NSCR control devices that meet a destruction efficiency of at least 76% for Formaldehyde emissions. In addition, AFR and NSCR control devices must control emissions to a level not to exceed 1.0 g/hp-hr NOx and 2.0 g/hp-hr CO when the engine is operated at 90% load or higher provided the criteria set forth in Sections IV. A-3 and B-3 are met.

VI. PERFORMANCE OPTIMIZATION REVIEWS

98. Within one year after the Effective Date of this Consent Decree, Wind River shall complete a Performance Optimization Review ("POR") to increase energy efficiency and enhance product recovery at the North Hill Creek Compressor Station and two well-site facilities associated with the North Hill Creek Compressor Station in accordance with the Scope of Work (SOW) described in Appendix "E".

99. If, within the time that the Consent Decree remains in effect, Bill Barrett achieves ten operating wells in the Lake Canyon ("LC") and Black Tail Ridge ("BTR") Tribal Exploration Agreement Areas ("LC & BTR Agreement Areas"), then Bill Barrett shall complete a POR to increase energy efficiency and enhance product recovery at the well-site facilities located in the LC & BTR Agreement Areas in accordance with the SOW described in Appendix "F". Within 30 Days of completing the ten wells, Bill Barrett

shall give written notice to EPA of that status and complete the POR within twelve months of the notice.

100. Each POR shall be performed by third-party consultant(s) acceptable to EPA.

101. POR Reports. Within 60 Days of completion of each POR, the Defendant responsible for such POR shall submit to EPA a POR Report that includes:

- a. The contractor(s) used to conduct the POR.
- b. The name, location, and original construction date of each of the well-site facilities and the compressor station at which the POR was completed.
- c. A general description of the components by type and service that were inspected, how they were inspected, a summary and description of any repairs made, an estimate of natural gas conserved as a result of the repairs to the extent quantifiable, and the repair cost.
- d. A general description of the pressure relief devices that were inspected, how they were inspected, a summary description of any repairs made, an estimate of natural gas conserved as a result of the repairs to the extent quantifiable, and the repair cost.
- e. A description of the review of production separators, identification of those for which optimal pressures and temperatures were calculated and how that was done, a comparison of those values to prior separator operating conditions, a summary of the adjustments to pressures or temperatures that were made, an estimate of the amount of natural gas conserved as a result, and the cost if significant, to adjust pressures and temperatures.

- f. A description of the evaluation of dehydrators for the use of condensers, flares, and flash tanks; a summary of the projects identified as a result of such review for possible future implementation by the Defendant on a voluntary basis; if sufficient data exists to prepare an estimate, an estimate of the amount of natural gas potentially conserved if such projects were implemented, and the cost to implement such projects.
- g. A description of the review of RICE shutdown procedures to reduce blow down and the use of starter gas; a summary of any changes that were made based on such review; an estimate of product losses avoided as a result of any changes made, if reasonably capable of estimation; and the cost to implement such changes.
- h. A description of the review of flare and vent systems, a summary of the repairs made, if any; an estimate of the amount of natural gas conserved as a result of repairs made, and the cost to implement such repairs.
- i. A list of well names and locations at which plunger lift systems were installed, if any, or at which green completion procedures were followed; a description of any plunger lift system(s) used and the well condition(s) that made such system(s) practicable or how new well completion procedures were "green"; an estimate of the amount of natural gas conserved as a result of POR evaluations of certain producing wells, and the cost to implement any such systems and/or procedures.
- j. A description of how operating pressures were evaluated and, where possible, optimized; an estimate of the amount of natural gas conserved as a result

of such evaluation, and an estimate of the cost, if non-negligible, to optimize operating pressures.

102. Within 120 Days of completion of each POR, the Defendant responsible for such POR may identify in writing to EPA any areas of non-compliance with the Act (including federal implementing regulations) that are identified during the POR. Under this Paragraph, for other than PSD/NSR, the Defendant responsible for such POR shall include in its written submission: (1) a certification pursuant to Paragraph 140 that it has complied with all applicable statutory and regulatory requirements, or it shall propose a schedule for achieving compliance; (2) a description of the corrective measures taken, or proposed to be taken; and (3) a proposed calculation of any economic benefit pursuant to the EPA Stationary Source Civil Penalty Policy and BEN Model. EPA will review the certification by the Defendant responsible for the POR, and/or proposed schedule for compliance, corrective measures, and economic benefit calculation(s), and will respond with written concurrence or comments. In the event that EPA does not approve the proposed corrective measures or economic benefit calculation(s) for a POR, the Defendant responsible for such POR will respond with written comments. Should EPA still not agree with the economic benefit calculation(s), EPA's independent economic benefit calculations shall be final and payable. If necessary, EPA and the Defendant will address any PSD/NSR violations as a new and separate enforcement action. Each Defendant's release from liability as specified in Section XVIII (Effect of Settlement/Reservation of Rights) for the areas of non-compliance identified and corrected pursuant to this Section VI will take effect upon EPA's written concurrence with the Defendant's certification and its payment in full of the economic benefit

associated with delayed compliance. Any areas of non-compliance discovered by EPA and any disclosures by such Defendant beyond this specific 120-Day period, are not covered by this provision.

VII. WIND RIVER DOWN-HOLE WATER SEPARATION CONVERSION PROJECT

103. Wind River shall complete a project using down-hole water separation and injection disposal methods in or near the Flat Rock Field in North Hill Creek in Indian country in the State of Utah ("Conversion Project"). Wind River intends that this Conversion Project will demonstrate the effectiveness of a system that pumps water from a gas-bearing formation directly into a non-productive formation within the same well bore. The results of this Conversion Project and its potential widespread use could eliminate diesel truck emissions and fugitive dust emissions associated with trucking produced water for disposal, while at the same time increasing natural gas production and reserves.

104. A Class II Underground Injection Well permit is required to implement this Conversion Project. By no later than 30 Days after the Effective Date of this Consent Decree, Wind River shall submit to EPA an application for the permit.

105. By no later than 90 Days after Wind River receives the Class II Underground Injection well permit from EPA, Wind River shall use its best efforts, weather permitting, to complete all well construction work necessary to commence the down-hole water separation activities necessary for the Conversion Project.

106. By no later than 180 Days after commencing down-hole water separation activities, Wind River shall provide EPA a final report that includes the following information:

- a. A discussion of the operating challenges, if any;

- b. An itemized list of all Conversion Project costs to date;
- c. A daily tally and cumulative natural gas produced from the well measured in thousands of cubic feet (MCF), after commencement of the Conversion Project;
- d. An estimate of the wells' natural gas reserves stated in millions of cubic feet (MMCF);
- e. A technical description of the well work over conversion from a rod-pump configuration to a down-hole separator configuration;
- f. An overall economic feasibility analysis of this type of project, to include the costs associated with this kind of well conversion compared with the possible payout from its enhanced gas production; and
- g. A description of air quality and other environmental benefits attributable to the project, together with any calculations used to estimate air emission reductions.

VIII. WIND RIVER SHALE-PLATING PROJECT

107. Wind River shall shale-plate the access roads for each of its future wells completed on Indian country in the State of Utah for as long as this Consent Decree is in effect. This project will reduce fugitive dust emissions from well access roads.

108. Wind River shall maintain records and information adequate to demonstrate its compliance with the requirements in Paragraph 107. Annually within 30 Days of the end of the calendar year, Wind River shall also provide to EPA a report that identifies the location and length of the individual roads that are shale-plated. Additionally, the reports shall include an itemized list of costs associated with the shale-plating of each road and estimated emissions reduced annually.

IX. BILL BARRETT EMISSION EVALUATION PROJECT

109. Bill Barrett shall evaluate potential emissions associated with new development in the LC & BTR Agreement Areas. This evaluation will quantify, via direct measurement, the actual emissions associated with uncontrolled production facilities. Emissions to be characterized and quantified include VOCs, specifically C-3 through C-10, and HAPS from tank flashing, dehydration, and fugitives. The characterization will include measurement of HAPs, as well as speciation of and measurement of VOCs at a representative production site in each producing LC or BTR Agreement Area.

110. The evaluation will include an analysis of the feasibility of employing emission reduction strategies in the LC & BTR Agreement Areas. The economic and technical feasibility of application of technologies currently cataloged by the EPA Gas Star Program will be evaluated using gas prices based on a forward looking 3-year average Colorado Interstate Gas ("CIG") gas price (Colorado Interstate Gas Company Index as published by Platts Inside FERC Gas Market Report).

111. The evaluation will also include a comparison of the measured emissions to the emissions that would be modeled or factored (e.g., flash emissions using API's E&P TANK model, dehydrator emissions using GRI's GLYCalc model, or fugitives using EPA-453/R-95-017 emission factors).

112. Within 30 Days after the Effective Date of this Consent Decree, Bill Barrett shall submit a Test Protocol to the EPA for approval for the proposed testing. The protocol will include a description of the production facilities where testing is to take place, a summary of production characteristics, and the basis for considering the selected facilities as representative of the LC & BTR Agreement Areas. The Test Protocol will include testing objectives, specific test methods, models or factors to be used for comparison to

measurements, and a summary of reporting requirements. Upon approval from the EPA, Bill Barrett shall implement the Emission Evaluation Project.

113. Bill Barrett will submit the final report on the evaluation to EPA within one year of receipt of EPA's approval of the Test Protocol.

X. BILL BARRETT VAPOR RECOVERY FEASIBILITY PROJECT

114.

a. Beginning on the Effective Date of this Consent Decree, Bill Barrett shall initiate, within 30 Days of completing a new natural gas well producing in either the LC or BTR Agreement Areas, requiring emission controls pursuant to Paragraphs 75 and 84, an evaluation of the feasibility of implementing vapor recovery as a means of controlling well-site emissions.

b. Bill Barrett will procure or design the vapor recovery equipment with the objective of meeting a 95% by weight or greater reduction in VOC or total HAP emissions.

115. If Bill Barrett determines that suitable vapor recovery equipment is commercially available, Bill Barrett will install and operate one such unit, provided that the projected Net Present Value (NPV) for purchase, installation and operation of the vapor recovery unit is greater than the NPV for the purchase, installation and operation of an enclosed flare. The NPV shall be calculated over a 10-year period of operation. Bill Barrett will operate the vapor recovery unit for a minimum period of one year..

116. When calculating the NPV of both the flare and the vapor recovery unit, Bill Barrett shall consider and provide on a before-tax basis:

a. Price forecasts for natural gas based on a forward looking 3-year average CIG gas price;

- b. Detailed breakdown of capital costs;
- c. Incremental annual maintenance costs for gas conservation equipment at 10% of capital costs (20% for sour gas);
- d. Long-term inflation rate based on CPI forecast; and
- e. Discount rate = United States Treasury prime lending rate + 3%.

117. If Bill Barrett determines that suitable equipment is not commercially available, Bill Barrett will prepare technical specifications and operational requirements for a vapor recovery unit suited to process between five and 75 TPY of typical VOC well-site emissions. Bill Barrett will submit these specifications to a minimum of two qualified equipment manufacturing firms for a construction estimate. Bill Barrett will contract for the construction of such unit and install and operate the unit, provided that the projected NPV for purchase, installation and operation is greater than the NPV for the purchase, installation and operation of an enclosed flare at an Agreement Area well. The NPV shall be calculated over a 10-Year period of operation. Bill Barrett will operate the vapor recovery unit for a minimum period of twelve months.

118.

- a. Bill Barrett shall submit to EPA quarterly progress reports, within 30 days of the end of each calendar quarter, providing the status of feasibility project. The initial quarterly report information will include: initiation date of the study, completion date of the new natural gas well that requires emission controls pursuant to Paragraphs 114 (a), and status of feasibility review. The installation date of a vapor recovery unit (either commercially available or designed and constructed specifically for Bill Barrett) shall be included in the report for the

quarter in which it is installed. Upon installation of the vapor recovery equipment, the quarterly reports shall identify percent downtime during the quarter. In the event of downtime greater than 5 percent of total operating time within each quarter, the cause and corrective actions taken or preventative measures adopted to increase operating time will be reported.

b. Within 45 days of the end of one year of operation of the vapor recovery unit, Bill Barrett shall submit to EPA for approval, proposed operational performance based criteria to include limits for downtime and bypass events. Bill Barrett shall be required to meet the EPA-approved performance criteria from that point forward.

c. Within 60 days of the end of one year of operation of the vapor recovery unit, Bill Barrett shall submit to EPA a final report including:

- (i) a summary of the rate and characteristics of the emission stream being recovered;
- (ii) a review of commercially available equipment and, if equipment was not commercially available, the technical specifications and operational requirements that formed the design basis of the unit
- (iii) the total VOC emission reductions for the year of operation (expressed in tons per year) and the total gas conserved (expressed in standard cubic feet);
- (iv) a discussion of the operational challenges encountered and solutions derived; and
- (v) a "Lessons Learned" article, suitable for publication (at Natural Gas STAR Program's discretion) by the EPA Natural Gas STAR Program, that summarizes one year of operation of the vapor recovery unit.

119. If a vapor recovery unit cannot be installed at a projected NPV for purchase, installation and operation greater than that for the purchase, installation and operation of

an enclosed flare, Bill Barrett shall install an enclosed flare meeting the requirements in Section IV. D-1 of this Consent Decree. Within 30 Days of installing the flare, Bill Barrett shall notify EPA in writing of the installation date. Within 60 Days of flare installation, Bill Barrett shall submit the determination that commercial equipment and custom designed equipment cannot be procured and installed at a projected NPV for purchase, installation and operation greater than that for the purchase, installation and operation of an enclosed flare.

120. All requirements of the Vapor Recovery Feasibility Project will be met within two years after the Effective Date of this Consent Decree.

XI. CIVIL PENALTY

121. Within 30 Days after the Effective Date of this Consent Decree, the Defendants shall pay to the United States a total civil penalty pursuant to Section 113 of the Act, 42 U.S.C. § 7413, in the amount of TWO HUNDRED AND FORTY THOUSAND DOLLARS (\$240,000.00), with interest accruing from the date on which the Consent Decree is entered by the Court at the rate specified in 28 U.S.C. § 1961 as of the Date of Entry. Each Defendant agrees that it is jointly and severally liable to pay the entire \$240,000.00.

122. The Defendants shall make the payment by Electronic Funds Transfer (“EFT”) to the United States Department of Justice (“DOJ”), in accordance with current EFT procedures, referencing the United States Attorney’s Office (“USAO”) File Number and DOJ Case Number 90-5-2-1- 09048 . Payment shall be made in accordance with instructions provided by the USAO for the District of Utah. Any funds received after 11:00 a.m. (EST/EDT) shall be credited on the next business day. The Defendants shall provide notice of payment, referencing the USAO File Number, DOJ Case Number 90-5-

2-1-09048 and the civil case name and case number, to DOJ and to EPA, as provided in Section XIX (“Notices”).

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

XII. SUPPLEMENTAL ENVIRONMENTAL PROJECTS

A. Wind River Class II Underground Injection Well SEP

124. Wind River shall implement a Supplemental Environmental Project (“SEP”) to complete a well conversion from an existing well bore to a Class II Underground Injection Well (Class II Underground Injection Well SEP). This Class II injection well will accept produced water from nearby production wells which will reduce diesel truck and Particulate Matter (road dust) emissions associated with trucking produced water for disposal. In implementing the Class II Underground Injection Well SEP, Wind River shall spend not less than ONE HUNDRED FIFTY THOUSAND DOLLARS (\$150,000.00) in eligible Class II Underground Injection Well disposal costs. Eligible Class II Underground Injection Well disposal costs include the costs of planning and implementing the Class II Underground Injection Well SEP.

125. A Class II Underground Injection Well permit is required to implement this SEP. By no later than 30 Days after the Effective Date of this Consent Decree, Wind River shall submit to EPA an application for the permit.

126. By no later than 180 Days after Wind River receives the Class II injection well permit from EPA, weather permitting, Wind River shall complete all well conversion work necessary to commence water injection.

127. Wind River shall maintain records and information adequate to demonstrate its compliance with the requirements in Paragraphs 124 through 127 and shall provide to

EPA a report annually, within 30 Days of the end of the calendar year, that describes the number of barrels of water injected into the well and a description of air quality and other environmental benefits attributable to the project, together with any calculations used to estimate air emission reductions.

B. Wind River Road Dust SEP

128. Wind River shall implement a SEP to improve existing well access roads associated with the North Hill Creek Compressor Station to reduce Particulate Matter (the "Road Dust SEP") by plating these roads with shale material. The Road Dust SEP shall be completed within twelve months after the Effective Date of this Consent Decree. In implementing the Road Dust SEP, Wind River shall spend not less than FIFTY THOUSAND DOLLARS (\$50,000) in eligible Road Dust SEP costs. Eligible Road Dust SEP costs include the costs of planning and implementing the Road Dust SEP.

129. Wind River shall maintain records and information adequate to demonstrate its completion of the SEP and shall provide to EPA a report within 30 Days from the end of the calendar year in which this SEP is implemented. The report shall describe the location and length of roads improved and a description of how they were improved, and a description of air quality and other environmental benefits attributable to the project, together with any calculations used to estimate air emission reductions.

C. General Requirements

130. With regard to each SEP, Wind River shall certify the truth and accuracy of each of the following:

- a. that all cost information provided to EPA in connection with EPA's approval of the SEP is complete and accurate and represents a fair estimate of the costs necessary to implement the SEP;

- b. that, as of the Effective Date of this Consent Decree, the Wind River is not required to perform or to develop the SEP by any federal, state, or local law or regulation or to perform or develop the SEP by prior agreement, grant, or as injunctive relief awarded in any other action in any forum;
- c. that the Wind River was not planning or intending to construct, perform, or implement the SEP other than in settlement of the claims resolved in this Consent Decree;
- d. that the Wind River has not received and will not receive credit for the SEP in any other enforcement action by a government entity;
- e. that the Wind River will not receive any reimbursement for any portion of the SEP costs from any other person; and
- f. for federal income tax purposes, Wind River agrees that it will neither capitalize into inventory or basis nor deduct any costs or expenditures incurred in performing the SEPs.

131. SEP Completion Reports. Within 30 Days after the date set for completion of a SEP, Wind River shall submit a SEP Completion Report to the United States, in accordance with Section XX (Notices) of this Consent Decree. Each SEP Completion Report shall contain the following information:

- a. A detailed description of the SEP, as implemented.
- b. A description of any problems encountered in completing the SEP and the solutions thereto.

- c. An itemized list of all eligible SEP costs.
- d. A description of the air quality benefits resulting from implementation of the SEP, including an estimate of associated emission reductions.

132. EPA may require information in addition to that described in Paragraph 131, which is reasonably necessary to determine satisfactory completion of the SEP or eligibility of SEP costs. Wind River shall provide such additional information requested by EPA.

133. After receiving each SEP Completion Report, the United States shall notify Wind River whether the SEP at issue has been satisfactorily completed. If the SEP has not been satisfactorily completed in accordance with all applicable work plans and schedules, or if the amount expended on performance of the SEP is less than the amount set forth in Paragraphs 124 and 128, stipulated penalties may be assessed under Section XIV.

134. If Wind River has spent less than the amounts set forth in Paragraphs 124 and 128, Wind River shall pay an amount equal to the difference between the amount of total eligible SEP costs incurred by Wind River and, as applicable, the amounts set forth in Paragraph 143(j)-(k) in accordance with the payment instructions set forth in Paragraph 122.

135. Disputes concerning the satisfactory completion of a SEP and the amount of eligible SEP costs may be resolved under Section XVI (Dispute Resolution) of this Consent Decree. No other disputes arising under this Section shall be subject to Dispute Resolution.

136. Each submission required under this Section shall be signed by an official with knowledge of the SEP and shall bear the certification language set forth in Paragraph 140.

137. Any public statement by Wind River making reference to a SEP, whether oral or written, in print, film, or other media, shall include the following language: "This project was undertaken in connection with the settlement of an enforcement action taken on behalf of the U.S. Environmental Protection Agency for alleged violations of the Clean Air Act."

XIII. RECORDKEEPING AND REPORTING REQUIREMENTS

138. Each Defendant shall maintain records and information to demonstrate compliance with the applicable requirements of Section IV, and shall submit the reports specified below:

- a. All initial performance test results, retest reports, initial stats reports, progress reports, final reports, notices, and monitoring data pursuant to any specific requirement of this Consent Decree for each annual reporting period (not a cumulative requirement);
- b. By no later than March 1 of each year, Wind River shall submit an Annual Report to EPA for the North Hill Creek Compressor Station for the preceding calendar year. In addition, each Defendant shall submit an Annual Report to EPA for all New Compression Facilities subject to Section IV.B., for all Existing Oil and Gas Production Facilities subject to Section IV.C. and all New Oil and Gas Production Facilities subject to Section IV.D. Each Defendant shall provide a paper and electronic copy of each Annual Report to EPA. The Annual Report shall: (i) describe all work or other activities that such Defendant performed

pursuant to any requirement of this Consent Decree during the applicable reporting period; (ii) transmit any specific (non-annual) reports to be included in an Annual Report; (iii) describe compliance status; and (iv) a description of any non-compliance with the requirements of this Consent Decree and explain the likely cause(s) of the violation(s) and of the remedial steps taken, or to be taken, to prevent or minimize such violation(s).

139. All reports shall be submitted to the persons designated in Section XX (Notices) of this Consent Decree.

140. Each Annual Report submitted by a Defendant shall be signed by an authorized official 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.

141. The reporting requirements of this Section shall continue until termination of this Consent Decree; however, upon written agreement by EPA, where a Consent Decree reporting requirement is added to a final Title V permit or other non-Title V permit such that the permit meets or exceeds such Consent Decree reporting requirement, the Defendant that obtains the Title V permit may fulfill that Consent Decree reporting requirement by notifying EPA that the required report has been provided pursuant to a permit requirement, and by identifying the relevant permit in the Defendant's Annual Reports, submitted pursuant to this Section XIII (Recordkeeping and Reporting Requirements).

142. Any information provided pursuant to this Consent Decree may be used by the United States in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

XIV. STIPULATED PENALTIES

143. Each Defendant shall be liable for stipulated penalties to the United States for its violations of applicable requirements in this Consent Decree as specified below, unless excused under Section XV (Force Majeure), or reduced or waived by EPA pursuant to Paragraph 151 of this Consent Decree. A violation includes failing to perform any obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Consent Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Consent Decree.

a. Dehydrators

	Violation	Stipulated Penalty
1.	For failure to operate and maintain applicable control equipment on dehydrators as specified in Paragraphs 8-10, 31, 32, 34, 53, 54, 55, 57, 75, 76 & 78.	For each unit: \$1,000 per day for the first 30 days of noncompliance, \$1,500 per day from the 31 st to 60 th day of noncompliance, and \$2,000 per day thereafter.
2.	For failure to revise application for Title V permit for the North Hill Creek Compressor Station as specified in Paragraph 27.	\$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.
3.	For failure to apply for available new source review permit authorizations or Title V permits as specified in Paragraph 49.	For each unit: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.
4.	For failure to maintain records as specified in Paragraphs 11, 12, 28, 36, 37, 59, 60, 80 & 81 and failure to submit reports as specified in Paragraphs 12, 28, 58, 60, 77, 79, 81 & 91.	For each unit: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.

b. Storage Tanks

	Violation	Stipulated Penalty
1.	For failure to install and operate a flare, VRU or non-flare alternative as specified in Paragraphs 13, 39, 63 & 85.	For each unit: \$1,000 per day for the first 30 days of noncompliance, \$2,500 per day from the 31 st to 60 th day of noncompliance, and \$5,000 per day thereafter.
2.	For failure to submit to EPA a worksheet on flare design and certification of compliance as required by Paragraphs 36 & 56.	For each unit: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.
3.	For failure to maintain records as specified in Paragraphs 28, 50, 72 & 91.	For each unit: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.
4.	For failure to submit reports as specified in Paragraphs 28, 41, 50, 65, 72 & 91.	For each unit: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.

c. Compressor Engines

	Violation	Stipulated Penalty
1.	For failure to install emission controls on a RICE as specified in Paragraphs 15 & 42.	For each unit: \$1,000 per day for the first 30 days of noncompliance, \$2,500 per day from the 31 st to 60 th day of noncompliance, and \$5,000 per day thereafter.
2.	For failure to conduct tests on the RICE emission controls as required by Paragraphs 19, 43e & 44c.	For each unit: \$500 per day for the first 30 days of noncompliance, \$1,000 per day from the 31 st to 60 th day of noncompliance, and \$1,500 per day thereafter.
3.	For failure to retest and submit a report as required by Paragraph 44d.	For each unit: \$500 per day for the first 30 days of noncompliance, \$1,000 per day from the 31 st to 60 th day of noncompliance, and \$1,500 per day thereafter.

	Violation	Stipulated Penalty
4.	For failure to conduct emission tests on RICE emission controls as required by Paragraph 44(e).	For each unit: \$500 per day for the first 30 days of noncompliance, \$1,000 per day from the 31 st to 60 th day of noncompliance, and \$1,500 per day thereafter.
5.	For failure to submit reports as required by Paragraphs 45 & 46 & 50.	For each report: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.
6.	For failure to apply for available new source review permits and Title V permits as specified in Paragraphs 27 & 49.	For each unit: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.

d. Pneumatic Controllers

	Violation	Stipulated Penalty
1.	For failure to complete one-half of the pneumatic retrofits/replacements as required by Paragraphs 24 & 69.	For each project: \$500 per day for the first 30 days of noncompliance, \$1,000 per day from the 31 st to 60 th day of noncompliance, and \$1,500 per day thereafter.
2.	For failure to complete remainder of the pneumatic retrofits/replacements as required by Paragraphs 25 & 70.	For each project: \$500 per day for the first 30 days of noncompliance, \$1,000 per day from the 31 st to 60 th day of noncompliance, and \$1,500 per day thereafter.
3.	For failure to provide to a final completion report for retrofitting/replacing Pneumatic Controllers as required by Paragraphs 26 & 71.	For each project: \$100 per day for the first 30 days of noncompliance, \$250 per day from the 31 st to 60 th day of noncompliance, and \$500 per day thereafter.
4.	For failure to install low-bleed or no-bleed Pneumatic Controllers at new compression facilities as required by Paragraphs 48 & 90.	For each project: \$100 per day for the first 30 days of noncompliance, \$250 per day from the 31 st to 60 th day of noncompliance, and \$500 per day thereafter.
5.	For failure to maintain records as required by Paragraphs 28, 50, 72 & 91.	For each project: \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.

e. Wind River and Bill Barrett PORs

	Violation	Stipulated Penalty
1.	For failure to complete the POR by the date specified in Paragraphs 98 & 99.	For each project, \$500 per day for the first 30 days of noncompliance, \$1,000 per day from the 31 st to 60 th day of noncompliance, and \$1,500 per day thereafter.
2.	For failure to submit a POR report as required by Paragraph 101.	\$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.

f. Wind River Down-Hole Water Separation Conversion Project

	Violation	Stipulated Penalty
1.	For failure to timely complete the down-hole water separation conversion project as specified in Paragraphs 103-106.	\$100 per day for the first 30 days of non-compliance, \$250 per day from the 31 st day to the 60 th day of non-compliance, and \$500 per day thereafter.

g. Wind River: Road Shale-Plating

	Violation	Stipulated Penalty
1.	For failure to timely complete the shale-plating of roads as specified in Paragraph 107-108.	\$100 per day for the first 30 days of non-compliance, \$250 per day from the 31 st day to the 60 th day of non-compliance, and \$500 per day thereafter.

h. Bill Barrett: Emission Evaluation Project

	Violation	Stipulated Penalty
1.	For failure to timely complete the emissions evaluation project as specified in Paragraphs 109-113.	\$100 per day for the first 30 days of non-compliance, \$250 per day from the 31 st day to the 60 th day of non-compliance, and \$500 per day thereafter.

i. Bill Barrett: Vapor Recovery Feasibility Study

	Violation	Stipulated Penalty
1.	For failure to conduct vapor recovery feasibility study as specified in Paragraphs 114-120.	For each station: \$1,000 per day for the first 30 days of noncompliance, \$2,500 per day from the 31 st to 60 th day of noncompliance, and \$5,000 per day thereafter.

j. Wind River: Class II Underground Injection Well SEP

	Violation	Stipulated Penalty
1.	For failure to implement SEP as specified in Paragraphs 124-127 & 130-131.	For each project, \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.

k. Wind River: Road Dust SEP

	Violation	Stipulated Penalty
1.	For failure to implement SEP as specified in Paragraphs 128-129 & 130-131.	For each project, \$200 per day for the first 30 days of noncompliance, \$500 per day from the 31 st to 60 th day of noncompliance, and \$1,000 per day thereafter.

144. Late Payment of Civil Penalty. If the Defendants fail to pay the entire civil penalty required to be paid under Section XI (Civil Penalty) of this Consent Decree to the United States when due then each Defendant shall pay an additional stipulated penalty of \$1,000 per Day for each Day that the payment is late.

145. Stipulated penalties under this Section shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree.

146. Except as provided in Paragraphs 150 and 152 below, each Defendant shall pay any stipulated penalty within 30 Days of receipt of written demand of the United States in accordance with the payment instructions set forth in Paragraph 122. A demand for the payment of stipulated penalties will identify the particular violation(s) to which the stipulated penalty relates, the stipulated penalty amount the United States is demanding for each violation, the calculation method underlying the demand, and the grounds upon which the demand is based.

147. Should a Defendant dispute the United States' demand for all or part of a stipulated penalty, that Defendant may avoid the imposition of a stipulated penalty for failure to pay a stipulated penalty under Paragraph 146 by placing the disputed amount demanded in a commercial, interest bearing, escrow account pending resolution of the matter and by invoking the dispute resolution provisions in Section XVI on Dispute Resolution within 20 Days of receipt of written demand from the United States.

148. Notwithstanding any other provision of this Consent Decree, the United States may, in its unreviewable discretion, reduce or waive all or any part of any stipulated penalties that may accrue pursuant to this Consent Decree. Payment of stipulated penalties shall relieve Defendants from liability to EPA from civil penalties under any permit for the same violation.

149. After the date on which payment is due under this Consent Decree, stipulated penalties shall continue to accrue as provided in Paragraph 145 during any dispute, with interest on accrued stipulated penalties payable and calculated by the Secretary of Treasury, pursuant to 28 U.S.C. § 1961, but need not be paid until the following:

a. If the dispute is resolved by agreement and is not appealed to the Court, the Defendant disputing the United States' demand shall pay accrued stipulated penalties and accrued interest agreed to determined to be owing within 30 Days of the effective date of such agreement.

b. If the dispute is appealed to the Court, and the United States prevails in whole or in part, the Defendant disputing the United States' demand shall pay all accrued stipulated penalties determined by the Court to be owing, together with accrued interest, within 60 Days of receiving the Court's decision or order, except as provided in Paragraph 149(c) below.

c. If any Party appeals the Court's decision, the Defendant disputing the United State's demand shall pay all accrued penalties determined by the appellate court to be owing, together with accrued interest, within 15 Days of receiving the final appellate court decision.

150. A Defendant shall not deduct stipulated penalties paid under this Section XIV in calculating its federal income tax.

151. Subject to the provisions of Section XVIII (Effect of Settlement/Reservation of Rights), the stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States for a Defendant's violation of this Consent Decree or applicable law. Where a violation of this Consent Decree is also a violation of the Act or regulatory requirements of the Act, such Defendant shall be allowed a dollar-for-dollar credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

XV. FORCE MAJEURE

152. If any event occurs which causes or may cause a delay or impediment to performance in complying with any applicable provision of this Consent Decree (*e.g.* would require operation in an unsafe manner), and which the Defendant responsible for complying with such requirement believes qualifies as an event of *Force Majeure*, the Defendant shall notify the United States in writing as soon as practicable, but in any event within 45 Days of the date when that Defendant first knew of the event or should have known of the event by the exercise of due diligence. In this notice, the Defendant shall specifically reference this Paragraph of this Consent Decree and describe the anticipated length of time the delay may persist, the cause or causes of the delay, the measures taken and/or to be taken by that Defendant to prevent or minimize the delay and the schedule by which those measures will be implemented. The notice required by this Section shall be effective upon dispatch by overnight delivery service that provides a record of the dispatch and delivery dates, or upon the mailing of the same by certified mail, return receipt requested, to the EPA Region 8 Office as specified in Paragraph 183. Such Defendant shall adopt all reasonable measures to avoid or minimize such delays.

153. Failure by a Defendant to substantially comply with the notice requirements of Paragraph 183, as specified above, shall render this Section voidable by the United States, as to the specific event for which the Defendant(s) has failed to comply with such notice requirement. If so voided, this Section shall be of no effect as to the particular event involved.

154. The United States shall notify the Defendant claiming *Force Majeure* in writing regarding its agreement or disagreement with any claim of a *Force Majeure* event within 45 Days of receipt of the *Force Majeure* notice as specified in Paragraph 183.

155. If the United States agrees that the delay or impediment to performance has been or will be caused by circumstances beyond the control of a Defendant, including any entity controlled or contracted by it, and that the Defendant could not have prevented the delay by the exercise of reasonable diligence, the Parties shall stipulate to an extension of the required deadline(s) for all requirement(s) affected by the delay by a period equivalent to the delay actually caused by such circumstances, or such other period as may be appropriate in light of the circumstances. Such stipulation may be filed as a modification to this Consent Decree pursuant to the modification procedures established in this Consent Decree. Such Defendant shall not be liable for stipulated penalties for the period of any such delay.

156. If the United States does not agree that the delay or impediment to performance has been or will be caused by circumstances beyond the control of a Defendant, including any entity controlled or contracted by it, and that the Defendant could have prevented the delay by the exercise of reasonable diligence, the position of the United States on the *Force Majeure* claim becomes final and binding on such Defendant, and such Defendant shall pay applicable stipulated penalties, unless such Defendant submits the matter to this Court for resolution by filing a petition for determination with this Court within 20 business Days after receiving the written notification of such Defendant as set forth in Paragraph 183. Once a Defendant has submitted such matter to this Court, the United States shall have 20 business Days to file a response to the petition. If a Defendant submits the matter to this Court for resolution and the Court determines that the delay or impediment to the performance has been or will be caused by circumstances beyond the control of such Defendant, including any entity controlled or contracted by such

Defendant, and that it could not have prevented the delay by the exercise of reasonable diligence, such Defendant shall be excused as to such event(s) and delay (including stipulated penalties) for all requirement(s) affected by the delay by a period equivalent to the delay actually caused by such circumstances, or such other period as may be appropriate in light of the circumstances.

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

158. As part of the resolution of any matter submitted to this Court under this Section, the Parties by agreement, or this Court by order, may in appropriate circumstances extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of any delay or impediment to performance on which an agreement by the Plaintiffs or approval by this Court is based. Defendant shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule, except to the extent that such

schedule is further modified, extended or otherwise affected by a subsequent *Force Majeure* event under this Section XV.

XVI. DISPUTE RESOLUTION

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

160. Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when a Defendant sends a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 20 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 shall be considered binding unless, within 20 Days after the conclusion of the informal negotiation period, the Defendant invokes formal dispute resolution procedures as set forth below.

161. Formal Dispute Resolution. A Defendant may only invoke formal dispute resolution procedures by serving on the United States a written Statement of Position regarding the matter in dispute within 20 Days after the conclusion of the informal negotiation period. The Statement of Position shall include, but may not necessarily be limited to, any factual data, analysis, or opinion supporting the position of the Defendant(s) and any supporting documentation relied upon by the Defendant(s).

162. The United States shall serve its Statement of Position within 30 Days of receipt of a Defendant's Statement of Position. The United States Statement of Position shall include, but may not necessarily 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 shall be binding on the Defendant(s), unless the Defendant(s) file a motion for judicial review of the dispute in accordance with Paragraph 163.

163. A Defendant may seek judicial review of the dispute by filing with the Court and serving on the United States, in accordance with Section XX (Notices) of this Consent Decree, a motion requesting judicial resolution of the dispute. The motion must be filed within 30 Days of receipt of the United States Statement of Position described in Paragraph 162. The motion shall contain a written statement of the position of the Defendant on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of the Consent Decree.

164. The United States shall respond to a Defendant's motion within the time period allowed by the Local Rules of this Court. The Defendant may file a reply memorandum, to the extent permitted by the Local Rules and allowed by the Court.

165. Except as otherwise provided in this Consent Decree, in any dispute brought under this Section XVI, the Defendant shall bear the burden of demonstrating that their position clearly complies with this Consent Decree.

166. If the Court determines the delay or impediment to performance has been or will be caused by circumstances beyond the control of Defendant(s), including any entity controlled or contracted by them, and that the delay could not have been prevented by the Defendant(s) by the exercise of reasonable diligence, the Defendant(s) shall be excused

as to that event(s) and delay (including stipulated penalties) for all requirements affected by the delay for a period of time equivalent to the delay caused by such circumstances or such other period as may be determined by the Court.

167. As part of the resolution of any matter submitted to this Court under this Section, the Parties by agreement, or this Court by order, may extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of any delay or impediment to performance agreed to by the United States or approved by this Court. A Defendant shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule, except to the extent that such schedule is further modified, extended or otherwise affected by a subsequent *Force Majeure* event under this Section XV.

XVII. INFORMATION COLLECTION AND RETENTION

168. The United States, and its representatives, including attorneys, contractors, and consultants, shall have the right of entry into any facility covered by this Consent Decree at all reasonable times, upon presentation of credentials, for the purpose of monitoring compliance with any of the provisions of this Consent Decree, including to:

- a. monitor the progress of activities required under this Consent Decree;
- b. inspect equipment and facilities covered by this Consent Decree; and
- c. inspect and copy documents, records, or other information to be maintained in accordance with the terms of this Consent Decree.

169. The provisions of Paragraph 168 shall not apply to a facility for such time that a POR is being conducted at that such facility pursuant to the requirements of Section VI of this Consent Decree.

170. Until two years after the termination of this Consent Decree, the Defendants shall retain, and shall instruct their contractors and agents to preserve, 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, that are required to be created, generated and/or maintained under this Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures. At any time during this information-retention period, upon request by the United States, the Defendants shall provide copies of any non-privileged documents, records, or other information required to be maintained under this Paragraph.

171. At the conclusion of the information-retention period provided in Paragraph 170, the Defendants shall notify the United States at least 90 Days prior to the destruction of any documents, records, or other information subject to the requirements of Paragraph 170 and, upon request by the United States, the Defendants shall deliver the requested non-privileged documents, records, or other information to EPA.

172. The Defendants may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege recognized by federal law. If a Defendants asserts such a privilege, such Defendant shall provide the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of each author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by such Defendant. However, no documents, records, or other information that

such Defendant is explicitly required to create or generate to satisfy a specific requirement of this Consent Decree shall be withheld on the grounds of privilege.

173. A Defendant may also assert that information required to be provided under this Section XVII is protected as Confidential Business Information (“CBI”) under 40 C.F.R. Part 2. As to any information that a Defendant seeks to protect as CBI, such Defendant shall follow the procedures set forth in 40 C.F.R. Part 2.

174. 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 pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of the Defendants to maintain documents, records, or other information imposed by applicable federal or state laws, regulations, or permits.

XVIII. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

175. This Consent Decree resolves all civil liability of each Defendant to the United States for all past and current violations alleged in the Complaint through the Effective Date of this Consent Decree.

176. Areas of non-compliance under the Act including federal implementing regulations, self-disclosed by a Defendant in accordance with the specific criteria and time constraints set forth in Section VI (Performance Optimization Review), shall be resolved upon the written concurrence of the United States with the Defendant’s Certification of Compliance pursuant to Paragraph 140.

177. In determining whether a future modification will result in a significant net emissions increase, a Defendant may not take credit for any emissions reductions required by the Consent Decree for netting purposes in accordance with the restrictions set forth at 40 C.F.R. § 52.21(3)(iii), and the applicable regulations implementing Part C

of Title I of the Clean Air Act. In addition, the emission reductions required under this Consent Decree may not be used for any emissions offset, banking, selling or trading program.

178. The United States reserves all legal and equitable remedies available to enforce the provisions of this Consent Decree, except as expressly stated in Paragraphs 102 & 176. This Consent Decree shall not be construed to limit the rights of the United States to obtain penalties or injunctive relief under the Act or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as expressly specified in Section V (Limits on Potential to Emit).

179. This Consent Decree is not a permit, or a modification of any permit, under any federal, State, or local laws or regulations. Nothing in this Consent Decree shall relieve the Defendants of their obligation to achieve and maintain complete compliance with all applicable federal, State, and local laws, regulations, and permits. A Defendant's compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits. The United States does not, by its consent to the entry of this Consent Decree, warrant or aver in any manner that a Defendant's compliance with any aspect of this Consent Decree will result in compliance with provisions of the Act, or with any other provisions of federal, State, or local laws, regulations, or permits.

180. This Consent Decree does not limit or affect the rights of a Defendant or of the United States against any third parties that are not a party to this Consent Decree, nor does it limit the rights of third parties that are not a party to this Consent Decree against a Defendant, except as otherwise provided by law.

181. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party that is not a party to this Consent Decree.

XIX. COSTS

182. The Parties shall bear their own costs of this action, including attorneys' fees, except that the United States shall be 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 when due.

XX. NOTICES

183. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-2-1-08656

and

Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Ariel Rios Building [2242A]
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

and

Assistant Regional Administrator
Office of Enforcement, Compliance, and Environmental Justice
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

As to Wind River:

Thomas W. Bachtell, CEO
Wind River Resources Corporation
1245 East Brickyard Road, Suite 110
Salt Lake City, UT 84106

As to Bill Barrett:

Duane Zavadil, V.P. Regulatory and Government Affairs
Bill Barrett Corporation
1099 18th Street, Suite 2300
Denver, CO 80202

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

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

XXI. SALES OR TRANSFERS OF OWNERSHIP/OPERATOR INTERESTS

186. If either Defendant proposes to sell or transfer all or any part of its ownership or responsibility as operator of any facility that is subject to any requirement of this Consent Decree, except for individual wells or groups of wells and associated well-head facilities, to an entity other than a Defendant or the Ute Indian Tribe of the Uintah & Ouray Reservation, or to an entity unrelated to that Defendant ("Third Party"), the Defendant shall advise the Third Party in writing of the existence of this Consent Decree prior to such sale or transfer and shall send a copy of such written notification to the United States pursuant to Section XX (Notices) of this Consent Decree at least 30 Days before the effective date of such proposed sale or transfer.

187. No sale or transfer of ownership to a Third Party shall take place before the Third Party consents in writing, by a stipulation to be filed with the Court, to: (1) accept all

obligations, terms and conditions of this Consent Decree applicable to the selling Defendant, exclusive of well-head facilities, that are subject to any requirement of this Consent Decree; (2) the jurisdiction of the Court to enforce the terms of this Consent Decree as to such party; and (3) become a party to this Consent Decree.

188. The Defendants may not assign, and may not be released from, obligations under this Consent Decree to pay the civil penalty in accordance with Section XI (Civil Penalties), undertake the Supplemental Environmental Project(s) in accordance with Section XII (Supplemental Environmental Project), pay stipulated penalties with respect to actions occurring prior to the date of transfer of ownership or operator responsibility in accordance with Section XIV (Stipulated Penalties), or maintain documents or provide reports with respect to those obligations in accordance with Sections XIII (Recordkeeping and Reporting Requirements) and XVII (Information Collection and Retention).

XXII. EFFECTIVE DATE

189. Unless otherwise specifically provided herein, the Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court.

XXIII. RETENTION OF JURISDICTION

190. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Decree or entering orders modifying this Decree, pursuant to Sections XXI (Sales or Transfers of Ownership/Operator Interests) and XXIV (Modification), or effectuating or enforcing compliance with the terms of this Consent Decree.

XXIV. MODIFICATION

191. The terms of this Consent Decree, including any attached appendices, may be modified only by a subsequent written agreement signed by all the Parties affected by such modification. With respect to any modification that constitutes a material change to this Decree, such written agreement shall be filed with the Court and effective only upon the Court's approval. Any disputes concerning modification of this Decree shall be resolved pursuant to Section XVI (Dispute Resolution) of this Consent Decree.

XXV. TERMINATION

192. This Consent Decree shall be in effect until it is terminated in accordance with the provisions of this Section XXV.

193. After completing the applicable requirements of this Consent Decree, a Defendant may serve upon the United States a Request for Termination. The Request for Termination shall certify that a Defendant has paid the civil penalty and all stipulated penalties, if any, that have accrued, and has fulfilled all applicable obligations of this Consent Decree, together with all necessary supporting documentation.

194. Following receipt by the United States of the Defendant' (s) Request for Termination, the requesting Defendant(s) and the United States shall confer informally concerning the Request for Termination and whether the Defendant(s) has satisfactorily complied with the applicable requirements for termination of this Consent Decree. If the United States agrees that the Decree may be terminated as to the requesting Defendant, the Defendant and the United States shall submit, for the Court's approval, a joint stipulation terminating the Decree.

195. If the United States does not agree that the requesting Defendant has completed the applicable requirements, the requesting Defendant may invoke the Dispute Resolution

provisions in Section XVI (Dispute Resolution) of this Consent Decree 60 Days after notifying the United States of the Request for Termination.

196. If the United States does not object in writing with specific reasons within 120 Days of receipt of the requesting Defendant's request, the requesting Defendant may move the Court for an order that this Consent Decree be terminated.

XXVI. PUBLIC PARTICIPATION

197. This Consent Decree shall be lodged with the Court for a period of not less than 30 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 Defendants 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 Consent Decree.

XXVII. SIGNATORIES/SERVICE

198. Each undersigned representative of the Defendants 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 he or she represents to this document.

199. Each Defendant represents that it has authority to legally obligate any of its corporate subsidiaries or affiliates that own or operate any of the facilities or any other oil and/or gas production or gathering facilities subject to any work or compliance requirements of this Consent Decree and to take all actions necessary to comply with the provisions of this Consent Decree.

200. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. Each Defendant agrees to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in 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.

XXVIII. INTEGRATION

201. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Consent Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than the Appendices, which are attached to and incorporated in this Consent Decree, and deliverables that are subsequently submitted and approved pursuant to this Consent Decree, no other document, nor any representation, inducement, agreement, understanding, or promise, constitutes any part of this Consent Decree or the settlement it represents, nor shall it be used in construing the terms of this Consent Decree.

XXIX. FINAL JUDGMENT

202. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States and the Defendants.

XXX. APPENDICES

203. The following appendices are attached to and incorporated into this Consent Decree:

Appendix "A" lists the North Hill Creek Compressor Station and associated wells for which Wind River is responsible.

Appendix "B" lists Bill Barrett's Existing Oil and Natural Gas Production Facilities and New Compression Facilities subject to the Consent Decree

Appendix "C" lists the Pneumatic Controllers at the North Hill Creek Compressor Station and Existing Oil & Natural Gas Facilities for which each Defendant is responsible.

Appendix "D" is the Portable Analyzer Test Protocol for RICE Compliance Demonstration for New & Existing Compression Facilities

Appendix "E" describes Wind River's Performance Optimization Review Project

Appendix "F" describes Bill Barrett's Performance Optimization Review Project

Dated and entered this ____ day of _____, 2009

UNITED STATES DISTRICT JUDGE
District of Utah

FOR PLAINTIFF, UNITED STATES OF AMERICA.

JOHN C. CRUDEN _____ Date _____
Acting Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
950 Pennsylvania Avenue, N.W.
Washington, D.C. 20530-00001

JAMES H. EPPERS _____ Date 3/19/09 _____
Special Attorney
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
c/o U.S. EPA (Mail Code ENF-L)
1595 Wynkoop Street
Denver, CO 80202

FOR THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY:

CATHERINE R. McCABE
Acting Assistant Administrator
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Date 3/27/09

ADAM M. KUSHNER
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Date March 20, 2009

FOR DEFENDANTS 



Thomas W. Bachtell, CEO
WIND RIVER RESOURCES CORPORATION

Date September 30, 2008

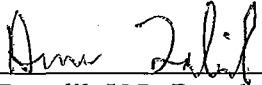
Date _____

Duane Zavadil, V.P. Regulatory and Government
Affairs
BILL BARRETT CORPORATION

FOR DEFENDANTS -

Thomas W. Bachtell, CEO
WIND RIVER RESOURCES CORPORATION

Date _____



Duane Zavadil, V.P. Regulatory and Government
Affairs
BILL BARRETT CORPORATION

Date 9/29/08

APPENDIX A

to the

Consent Decree

in the matter of

**United States of America v. Wind River Resources Corporation &
Bill Barrett Corporation**

Wind River Areas of Operation on Indian country

Wind River has defined its existing and future Indian country Facilities as listed below as part of a settlement of alleged violations of the Clean Air Act with the United States.

Wind River Existing Compression Facility

Facility: North Hill Creek Compressor Station
 Title V Permit: Application filed February 10, 2005
 Construction Permits: None - Located on Ute Tribal Land-No NSR program
 Legal Location: Section 3, SW ¼ SE ¼ T15S, R20E Uintah County, Utah

Facility	Township	Range	Section
NHCCS	T15S	R20E	3

Wind River Existing Oil and Gas Production Facilities

Facilities: North Hill Creek Wells (see table)
 Title V Permit: None
 Construction Permits: None- Located on Ute Tribal Land-No NSR program
 Legal Location: See list below

Well Name	Township	Range	Section
NHC 1-9-15-20	15S	20E	NENE Sec 9
NHC 10-10-15-20	15S	20E	NWSE Sec 10
NHC 8-13 -15-20	15S	20E	SENE Sec 13
NHC 4-13-15-20	15S	20E	NWNW Sec 13
NHC 2-14-15-20	15S	20E	NWNE Sec 14
NHC 9-11-15-20	15S	20E	NESE Sec 11
NHC 14-11-15-20	15S	20E	SESW Sec 11
NHC 2-12-15-20	15S	20E	NWNE Sec 12
NHC 4-1-15-20	15S	20E	NWNW Sec 1
NHC 3-6X-15-20	15S	20E	NENW Sec 6
NHC 1-6-15-20	15S	20E	NENE Sec 6
NHC 1-25-14-19 (1)	14S	19E	NENE Sec 25
NHC 15-31-14-21	14S	21E	SWSE Sec 31
NHC 6-11-15-20 (1)	15S	20E	SENE Sec 11
NHC 11-12-15-20 (1)	15S	20E	NESW Sec 12
NHC 4-10-15-20 (1)	15S	20E	NWNW Sec 10
NHC 1-11-15-20 (1)	15S	20E	NENE Sec 11
NHC 12-33-15-20 (1)	15S	20E	NWSW Sec 33
NHC 14-8-15-20	15S	20E	SESW Sec 8

(1) Currently temporarily Shut in- status may change prior to signing

Wind River Future Oil and Gas Production and Compression Facilities

Facilities: Future North Hill Creek Wells and Compression Facilities to be determined
 Legal Location: Within Existing North Hill Creek Agreement Area

Well Name	Township	Range	Section
<i>Future Wells Pending</i>			

APPENDIX C

to the

Consent Decree

in the matter of

United States of America v. Wind River Resources Corporation & Bill Barrett
Corporation

HIGH BLEED PNEUMATIC CONTROLLERS AT THE NORTH HILL CREEK
COMPRESSOR STATION AND THE EXISTING NORTH HILL CREEK WELLS TO BE
RETROFITTED WITH LOW-BLEED PNEUMATIC CONTROLLERS

High-Bleed Device							
Make/Model ¹⁸²	Type	Location		Number of Devices	Bleed Rate		
		Facility Name	Equipment Piece		Volume per Device (cfh)	Total Device Volume (cfh)	Intermittent or Continuous
North Hill Creek Compressor Station							
Invalco Flextube Control/ CTU-415-A	liquid-level controller	NHCCS	Inlet Separator	2	40	80	continuous
Murphy LS200 NDVO	liquid-level controller	NHCCS	Compressor 1	3	0	0	Intermittent
Murphy LS200 NDVO	liquid-level controller	NHCCS	Compressor 2	3	0	0	Intermittent
Norriseal/series 1005P1/1018-VP	liquid-level controller	NHCCS	Inlet Coalesser	1	20	20	Intermittent
Invalco Flextube Control/CTU-415-A-S	liquid-level controller	NHCCS	Dehy #1 contactor tower	1	20	20	continuous
Invalco Flextube Control/CTS-215	liquid-level controller	NHCCS	Dehy #1 Flash Separator	2	40	80	continuous
Invalco Flextube Control/CTU-415-A-S	liquid-level controller	NHCCS	Dehy #2 contactor tower	1	20	20	continuous
Invalco Flextube Control/CTS-215	liquid-level controller	NHCCS	Dehy #2 Flash Separator	2	40	80	continuous
Wellmark Snaprol/ST2TP	liquid-level controller	NHCCS	BTEX	1	20	20	Intermittent
Norriseal/series 1005P1/1018-VP	liquid-level controller	NHCCS	Outlet Coalesser	1	20	20	Intermittent
Norriseal snap/1001A	liquid-level controller	NHCCS	Fuel Scrubber	1	20	20	Intermittent
Totals:				18		360	

High-Bleed Device							
Make/Model ¹⁸²	Type	Location		Number of Devices	Bleed Rate		
		Facility Name	Equipment Piece		Volume per Device (cfh)	Total Device Volume (cfh)	Intermittent or Continuous
North Hill Creek Wells							
Invalco CTU-415-A-S	liquid-level controller	NHC 1-9-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 10-10-15-20	Separator	1	40	40	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 8-13-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 4-13-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 2-14-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 9-11-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 14-11-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 2-12-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 4-1-15-20	Separator	2	40	80	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 3-6-15-20	Separator	2	40	80	Continuous
Cemco	liquid-level controller	NHC 3-6-15-20	Separator	2	20	40	Continuous
Invalco CTU-415-A-S	liquid-level controller	NHC 1-6-15-20	Separator	2	40	80	Continuous
Cemco	liquid-level controller	NHC 1-25-14-19	Separator	2	20	40	Continuous
Cemco	liquid-level controller	NHC 15-31-14-21	Separator	2	20	40	Continuous
Totals:				27		960	

APPENDIX B

to the

Consent Decree

in the matter of

United States of America v. Wind River Resources Corporation &
Bill Barrett Corporation

Bill Barrett Areas of Operation on Indian country

Bill Barrett Corporation has defined its existing and future Indian country Facilities as listed below as part of a settlement of alleged violations of the Clean Air Act with the United States.

Bill Barrett Existing Oil and Gas Production Facilities

Facilities: Lake Canyon Production Wells (see table)
Title V Permit: None
Construction Permits: None-Located on Ute Tribal Land-No NSR program
Legal Location: See table below

Well Name	Township	Range	Section
#1 DLB 12-15-56	T5S	R6W	15
#1-15-56 DLB	T5S	R6W	15
7-20-46 DLB	T4S	R6W	20
7-21-46 DLB	T4S	R6W	21
7-28-46 DLB	T4S	R6W	28
14-30-36 BTR	T3S	R6W	30
5-23-36 BTR	T3S	R6W	23
12-36-36 BTR	T3S	R6W	36
5-21-36 BTR	T3S	R6W	21
5-5-46 BTR	T4S	R6W	5
14-29-36 BTR	T3S	R6W	29
7-7-46 BTR	T4S	R6W	7
14-7-46 BTR	T4S	R6W	7
1-5-45 BTR	T4S	R5W	5
7-8-45 BTR	T4S	R5W	8
5-25-36 BTR	T3S	R6W	25

Bill Barrett Future BTR and LC Oil and Gas Production and Compression Facilities

Facilities: Black Tail Ridge (B) and Lake Canyon (LC) Compression and Production Facilities to be determined

Legal Location: See list below and map attached of the existing Lake Canyon and Black Tail Ridge Agreement Area

Black Tail Ridge Agreement Area

Township	Range	Section	Facility
3S	5W	ALL	B
3S	6W	ALL	B
3S	7W	1-29; 32-36	B
4S	5W	1-18	B
4S	6W	1-18	B
4S	7W	1-5; 7-16	B

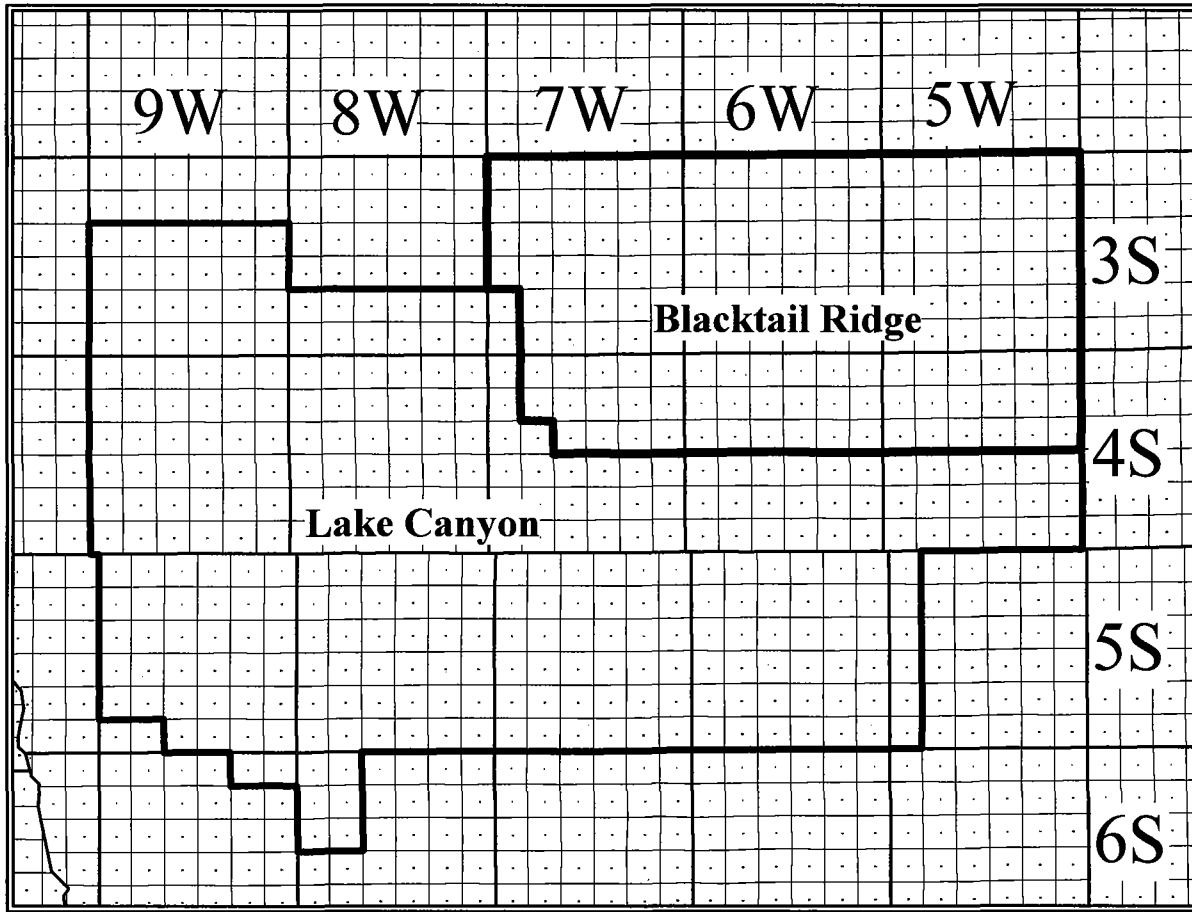
Lake Canyon Agreement Area

Township	Range	Section	Facility
3S	7W	30-31	LC
3S	8W	25-36	LC
3S	9W	13-36	LC
4S	5W	19-36	LC
4S	6W	19-36	LC
4S	7W	6-7; 17-36	LC
4S	8W	ALL	LC
4S	9W	ALL	LC
5S	5W	6-7; 18-19; 30-31	LC
5S	6W	ALL	LC
5S	7W	ALL	LC
5S	8W	ALL	LC
5S	9W	1-30; 33-36	LC
6S	8W	5-8; 17-18	LC
6S	9W	1-2	LC

Bill Barrett Future Oil and Gas Production and Compression Facilities in Yet to Be Determined Tribal Agreement Areas

Facilities: Oil and Gas Production and Compression Facilities to be determined

Legal Location: Located within any future Tribal Agreement areas within Indian country defined in this Consent Decree.



0079 A R40017 2 10-01 004

APPENDIX D

to the

Consent Decree in the matter of

United States of America v. Wind River Resources Corporation and Bill Barrett Corporation

PORTABLE ANALYZER TEST PROTOCOL

**Determination of Nitrogen Oxides, Carbon Monoxide and Oxygen Emissions
from Natural Gas-Fired Reciprocating Engines and Carbon Monoxide Control Efficiency from Controlled
Natural Gas-Fired Lean-Burn Reciprocating Engines.**

TABLE OF CONTENTS

1. APPLICABILITY AND PRINCIPLE.....	Page 4
1.1 Background.....	
1.2 Applicability	Page 5
1.3 Principle.....	Page 5
2. RANGE AND SENSITIVITY.....	Page 5
2.1 Analytical Range.....	Page 5
3. DEFINITIONS.....	Page 6
3.1 Measurement System.....	Page 6
3.2 Nominal Range	Page 6
3.3 Span Gas	Page 7
3.4 Zero Calibration Error.....	Page 7
3.5 Span Calibration Error	Page 7
3.6 Response Time.....	Page 7
3.7 Interference Check.....	Page 7
3.8 Linearity Check.....	Page 7
3.9 Stability Check.....	Page 7
3.10 Stability Time.....	Page 8
3.11 Initial NO Cell Temperature	Page 8
3.12 Test.....	Page 8
4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS.....	Page 8
4.1 Zero Calibration Error.....	Page 8
4.2 Span Calibration Error	Page 8
4.3 Interference Response.....	Page 8
4.4 Linearity.....	Page 8
4.5 Stability Check Response	Page 9
4.6 CO Measurement, H ₂ Compensation.....	Page 9
5. APPARATUS AND REAGENTS.....	Page 9
5.1 Measurement System.....	Page 9
5.2 Calibration Gases.....	Page 11
6. MEASUREMENT SYSTEM PERFORMANCE CHECK PROCEDURES	Page 12
6.1 Calibration Gas Concentration Certification	Page 12
6.2 Linearity Check.....	Page 12
6.3 Interference Check.....	Page 13
6.4 Stability Check.....	Page 13

7. EMISSION TEST PROCEDURE	Page 14
7.1 Pre and Post Catalyst Sampling	Page 14
7.2 Warm Up Period	Page 14
7.3 Pretest Calibration Error Check	Page 14
7.4 NO Cell Temperature Monitoring	Page 15
7.5 Sample Collection	Page 16
7.6 Post Test Calibration Error Check	Page 16
7.7 Interference Check	Page 17
7.8 Re-Zero	Page 18
8. DATA COLLECTION	Page 18
8.1 Linearity Check Data	Page 18
8.2 Stability Check Data	Page 18
8.3 Pretest Calibration Error Check Data	Page 18
8.4 Test Data	Page 19
8.5 Post Test Calibration Error Check Data	Page 19
8.6 Corrected Test Results	Page 20
9. CALIBRATION CORRECTIONS	Page 20
9.1 Emission Data Corrections	Page 20
10. EMISSION CALCULATIONS	Page 20
10.1 Emission Calculations for Reciprocating Engines	Page 21
10.2 Concentration Normalization to 15% O ₂	Page 23
10.3 CO Control Efficiency Calculations for Lean-Burn Engines Equipped with Oxidation Catalyst	Page 23
11. REPORTING FORMS.	Page 24
LINEARITY CHECK DATA SHEET	FORM A
STABILITY CHECK DATA SHEET	FORM B
CALIBRATION ERROR CHECK DATA SHEET	FORM C
RECIPROCATING ENGINE TEST RESULTS	FORM D-1
OXIDATION CATALYST EFFICIENCY RESULTS	FORM D-2

OVERVIEW AND PURPOSE

Wind River Resources Corporation and Bill Barrett Corporation has agreed to conduct emission tests of nitrogen oxides (NO and NO₂), and carbon monoxide (CO) on reciprocating internal combustion engines (RICE) located in Indian Country as defined in the settlement of alleged Clean Air Act violations with the United States. The terms of that settlement and definition of Indian Country are specified in a consent decree to be entered by the United States District Court for the District of Utah to be titled *United States of America v. Wind River Resources Corporation and Bill Barrett Corporation* (hereafter the "Consent Decree"). Wind River Resources Corporation and Bill Barrett Corporation have prepared this Portable Analyzer Test Protocol to be followed for tests as specified in the Consent Decree within Section IV.A-3 and B-3.

1. APPLICABILITY AND PRINCIPLE

1.1 Background. This protocol was prepared for Wind River Resources Corporation and Bill Barrett Corporation for determining nitrogen oxides (NO and NO₂), and carbon monoxide (CO) concentrations for controlled rich and lean-burn natural-gas fired reciprocating engines and determining the CO control efficiency from controlled lean-burn natural gas fired reciprocating engines using portable analyzers with electrochemical cells. Per the Consent Decree Section IV.A-3 for the North Hill Creek Compressor Station existing controlled natural gas fired rich burn compressor engines, the portable analyzer testing protocol will be followed for the NO_x emission

tests required every 2190 run hours. Per the Consent Decree Section IV.B-3 for new compressor engines on Indian Country as defined by the Consent Decree, the portable analyzer testing protocol will be followed for the NO_x and CO emission tests for controlled rich or lean burn natural gas fired compression engines, and the catalyst control efficiency for CO will be determined per this protocol for lean burn natural gas fired compression engines controlled with oxidation catalysts.

1.2 Applicability. This method is applicable to the determination of nitrogen oxides (NO and NO₂), carbon monoxide (CO), and oxygen (O₂) concentrations in controlled and uncontrolled emissions from natural gas-fired reciprocating engines using portable analyzers with electrochemical cells. The use of reference method equivalent analyzers is acceptable provided the appropriate reference method procedures in 40 CFR 60, Appendix A are used.

1.3 Principle. A gas sample is continuously extracted from a stack and conveyed to a portable analyzer for determination of NO, NO₂, CO, and O₂ gas concentrations using electrochemical cells. Analyzer design specifications, performance specifications, and test procedures are provided to ensure reliable data. Additions to or modifications of vendor-supplied analyzers (e.g. heated sample line, flow meters, etc.) may be required to meet the design specifications of this test method.

2. RANGE AND SENSITIVITY

2.1 Analytical Range. The analytical range for each gas component is determined by the electrochemical cell design. A

portion of the analytical range is selected to be the nominal range by choosing a span gas concentration near the flue gas concentrations or permitted emission level in accordance with Sections 2.1.1, 2.1.2 and 2.1.3.

2.1.1 CO and NO Span Gases. Choose a span gas concentration such that the average stack gas reading for each test is greater than 25 percent of the span gas concentration. Alternatively, choose the span gas such that it is not greater than 3.33 times the concentration equivalent to the emission standard. If concentration results exceed 125 percent of the span gas at any time during the test, then the test for that pollutant is invalid.

2.1.2 NO₂ Span Gas. Choose a span gas concentration such that the average stack gas reading for each test is greater than 25 percent of the span gas concentration. Alternatively, choose the span gas concentration such that it is not greater than the ppm concentration value of the NO span gas. The tester should be aware NO₂ cells are generally designed to measure much lower concentrations than NO cells and the span gas should be chosen accordingly. If concentration results exceed 125 percent of the span gas at any time during the test, then the test for that pollutant is invalid.

2.1.3 O₂ Span Gas. The O₂ span gas shall be dry ambient air at 20.9% O₂.

3. DEFINITIONS

3.1 Measurement System. The total equipment required for the

determination of gas concentration. The measurement system consists of the following major subsystems:

3.1.1 Sample Interface. That portion of a system used for one or more of the following: sample acquisition, sample transport, sample conditioning, or protection of the electrochemical cells from particulate matter and condensed moisture.

3.1.2 External Interference Gas Scrubber. A tube filled with scrubbing agent used to remove interfering compounds upstream of some electrochemical cells.

3.1.3 Electrochemical (EC) Cell. That portion of the system that senses the gas to be measured and generates an output proportional to its concentration. Any cell that uses diffusion-limited oxidation and reduction reactions to produce an electrical potential between a sensing electrode and a counter electrode.

3.1.4 Data Recorder. It is recommended that the analyzers be equipped with a strip chart recorder, computer, or digital recorder for recording measurement data. However, the operator may record the test results manually in accordance with the requirements of Section 7.5.

3.2 Nominal Range. The range of concentrations over which each cell is operated (25 to 125 percent of span gas value). Several nominal ranges may be used for any given cell as long as the linearity and stability check results remain within specification.

3.3 Span Gas. The high level concentration gas chosen for each nominal range.

3.4 Zero Calibration Error. For the NO, NO₂ and CO channels, the absolute value of the difference, expressed as a percent of the span gas, between the gas concentration exhibited by the gas analyzer when a zero level calibration gas is introduced to the analyzer and the known concentration of the zero level calibration gas. For the O₂ channel, the difference, expressed as percent O₂, between the gas concentration exhibited by the gas analyzer when a zero level calibration gas is introduced to the analyzer and the known concentration of the zero level calibration gas.

3.5 Span Calibration Error. For the NO, NO₂ and CO channels, the absolute value of the difference, expressed as a percent of the span gas, between the gas concentration exhibited by the gas analyzer when a span gas is introduced to the analyzer and the known concentration of the span gas. For the O₂ channel, the difference, expressed as percent O₂, between the gas concentration exhibited by the gas analyzer when a span gas is introduced to the analyzer and the known concentration of the span gas.

3.6 Response Time. The amount of time required for the measurement system to display 95 percent of a step change in the NO or CO gas concentration on the data recorder (90 percent of a step change for NO₂).

3.7 Interference Check. A method of quantifying analytical interferences from components in the stack gas other than the

analyte.

3.8 Linearity Check. A method of demonstrating the ability of a gas analyzer to respond consistently over a range of gas concentrations.

3.9 Stability Check. A method of demonstrating an electrochemical cell operated over a given nominal range provides a stable response and is not significantly affected by prolonged exposure to the analyte.

3.10 Stability Time. As determined during the stability check; the elapsed time from the start of the gas injection until a stable reading has been achieved.

3.11 Initial NO Cell Temperature. The temperature of the NO cell during the pretest calibration error check. Since the NO cell can experience significant zero drift with cell temperature changes in some situations, the cell temperature must be monitored if the analyzer does not display negative concentration results. Alternatively, manufacturer's documentation may be submitted showing the analyzer incorporates a NO cell temperature control and temperature exceedance warning system.

3.12 Test. The collection of emissions data from a source for an equal amount of time at each sample point and for a minimum of 21 minutes total.

4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS

4.1 Zero Calibration Error. Less than or equal to ± 3 percent of the span gas value for NO, NO₂, and CO channels and less than or equal to ± 0.3 percent O₂ for the O₂ channel.

4.2 Span Calibration Error. Less than or equal to ± 5 percent of the span gas value for NO, NO₂, and CO channels and less than or equal to ± 0.5 percent O₂ for the O₂ channel.

4.3 Interference Response. The CO and NO interference responses must be less than or equal to 5 percent as calculated in accordance with Section 7.7.

4.4 Linearity. For the zero, mid-level, and span gases, the absolute value of the difference, expressed as a percent of the span gas, between the gas value and the analyzer response shall not be greater than 2.5 percent for NO, CO and O₂ cells and not greater than 3.0 percent for NO₂ cells.

4.5 Stability Check Response. The analyzer responses to CO, NO, and NO₂ span gases shall not vary more than 3.0 percent of span gas value over a 30-minute period or more than 2.0 percent of the span gas value over a 15-minute period.

4.6 CO Measurement, Hydrogen (H₂) Compensation. It is recommended that CO measurements be performed using a hydrogen-compensated EC cell since CO-measuring EC cells can experience significant reaction to the presence of H₂ in the gas stream. Sampling systems equipped with a scrubbing agent prior to the CO cell to remove H₂ interferent gases may also be used.

5. APPARATUS AND REAGENTS

5.1 Measurement System. Use any measurement system that meets the performance and design specifications in Sections 4 and 5 of this method. The sampling system shall maintain the gas sample at a temperature above the dew point up to the moisture removal system. The sample conditioning system shall be designed so there are no entrained water droplets in the gas sample when it contacts the electrochemical cells. A schematic of an acceptable measurement system is shown in Figure 1. The essential components of the measurement system are described below:

5.1.1 Sample Probe. Glass, stainless steel, or other nonreactive material, of sufficient length to sample per the requirements of Section 7. If necessary to prevent condensation, the sampling probe shall be heated.

5.1.2 Heated Sample Line. Heated (sufficient to prevent condensation) nonreactive tubing such as teflon, stainless steel, glass, etc. to transport the sample gas to the moisture removal system. (Includes any particulate filters prior to the moisture removal system.)

5.1.3 Sample Transport Lines. Nonreactive tubing such as teflon, stainless steel, glass, etc. to transport the sample from the moisture removal system to the sample pump, sample flow rate control, and electrochemical cells.

5.1.4 Calibration Assembly. A tee fitting to attach to the probe tip or where the probe attaches to the sample line for introducing calibration gases at ambient pressure during the

calibration error checks. The vented end of the tee should have a flow indicator to ensure sufficient calibration gas flow. Alternatively use any other method that introduces calibration gases at the probe at atmospheric pressure.

5.1.5 Moisture Removal System. A chilled condenser or similar device (e.g., permeation dryer) to remove condensate continuously from the sample gas while maintaining minimal contact between the condensate and the sample gas.

5.1.6 Particulate Filter. Filters at the probe or the inlet or outlet of the moisture removal system and inlet of the analyzer may be used to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters shall be fabricated of materials that are nonreactive to the gas being sampled.

5.1.7 Sample Pump. A leak-free pump to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The pump may be constructed of any material that is nonreactive to the gas being sampled.

5.1.8 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent during sampling and calibration error checks. The components shall be fabricated of materials that are nonreactive to the gas being sampled.

5.1.9 Gas Analyzer. A device containing electrochemical cells to determine the NO, NO₂, CO, and O₂ concentrations in the sample

gas stream and, if necessary, to correct for interference effects. The analyzer shall meet the applicable performance specifications of Section 4. A means of controlling the analyzer flow rate and a device for determining proper sample flow rate (e.g., precision rotameter, pressure gauge downstream of all flow controls, etc.) shall be provided at the analyzer. (Note: Housing the analyzer in a clean, thermally-stable, vibration-free environment will minimize drift in the analyzer calibration, but this is not a requirement of the method.)

5.1.10 Data Recorder. A strip chart recorder, computer, or digital recorder, for recording measurement data. The data recorder resolution (i.e., readability) shall be at least 1 ppm for CO, NO, and NO₂; 0.1 percent O₂ for O₂; and one degree (C or F) for temperature.

5.1.11 External Interference Gas Scrubber. Used by some analyzers to remove interfering compounds upstream of a CO electrochemical cell. The scrubbing agent should be visible and should have a means of determining when the agent is exhausted (e.g., color indication).

5.1.12 NO Cell Temperature Indicator. A thermocouple, thermistor, or other device must be used to monitor the temperature of the NO electrochemical cell. The temperature may be monitored at the surface of the cell, within the cell or in the cell compartment. Alternatively, manufacturer's documentation may be submitted showing the analyzer incorporates a NO cell temperature control and temperature exceedance warning system.

5.2 Calibration Gases. The CO, NO, and NO₂ calibration gases for the gas analyzer shall be CO in nitrogen or CO in nitrogen and O₂, NO in nitrogen, and NO₂ in air or nitrogen. The mid-level O₂ gas shall be O₂ in nitrogen.

5.2.1 Span Gases. Used for calibration error, linearity, and interference checks of each nominal range of each cell. Select concentrations according to procedures in Section 2.1. Clean dry air may be used as the span gas for the O₂ cell as specified in Section 2.1.3.

5.2.2 Mid-Level Gases. Select concentrations that are 40-60 percent of the span gas concentrations.

5.2.3 Zero Gas. Concentration of less than 0.25 percent of the span gas for each component. Ambient air may be used in a well ventilated area for the CO, NO, and NO₂ zero gases.

6. MEASUREMENT SYSTEM PERFORMANCE CHECK PROCEDURES. Perform the following procedures before the measurement of emissions under Section 7.

6.1 Calibration Gas Concentration Certification. For the mid-level and span cylinder gases, use calibration gases certified according to EPA Protocol 1 procedures. Calibration gases must meet the criteria under 40 CFR 60, Appendix F, Section 5.1.2 (3). Expired Protocol 1 gases may be recertified using the applicable reference methods.

6.2 Linearity Check. Conduct the following procedure once for each nominal range to be used on each electrochemical cell (NO,

NO₂, CO, and O₂). After a linearity check is completed, it remains valid for five consecutive calendar days. After the five calendar day period has elapsed, the linearity check must be performed again. Additionally, perform the linearity check if the cell is replaced. (If the stack NO₂ concentration is less than 5% of the stack NO concentration as determined using the emission test procedures under Section 7, the NO₂ linearity check is not required. However, the NO₂ cell shall be calibrated in accordance with the manufacturer's instructions, the pretest calibration error check and post test calibration error check shall be conducted in accordance with Section 7, and the test results shall be added to the NO test values to obtain a total NO_x concentration.)

6.2.1 Linearity Check Gases. For each cell obtain the following gases: zero (0-0.25 percent of nominal range), mid-level (40-60 percent of span gas concentration), and span gas (selected according to Section 2.1).

6.2.2 Linearity Check Procedure. If the analyzer uses an external interference gas scrubber with a color indicator, using the analyzer manufacturer's recommended procedure, verify the scrubbing agent is not depleted. After calibrating the analyzer with zero and span gases, inject the zero, mid-level, and span gases appropriate for each nominal range to be used on each cell. Gases need not be injected through the entire sample handling system. Purge the analyzer briefly with ambient air between gas injections. For each gas injection, verify the flow rate is constant and the analyzer responses have stabilized before recording the responses on Form A.

6.3 Interference Check. A CO cell response to the NO and NO₂ span gases or an NO cell response to the NO₂ span gas during the linearity check may indicate interferences. If these cell responses are observed during the linearity check, it may be desirable to quantify the CO cell response to the NO and NO₂ span gases and the NO cell response to the NO₂ span gas during the linearity check and use estimated stack gas CO, NO and NO₂ concentrations to evaluate whether or not the portable analyzer will meet the post test interference check requirements of Section 7.7. This evaluation using the linearity check data is optional. However, the interference checks under Section 7.7 are mandatory for each test.

6.4 Stability Check. Conduct the following procedure once for the maximum nominal range to be used on each electrochemical cell (NO, NO₂ and CO). After a stability check is completed, it remains valid for five consecutive calendar days. After the five calendar day period has elapsed, the stability check must be performed again. Additionally, perform the stability check if the cell is replaced or if a cell is exposed to gas concentrations greater than 125 percent of the highest span gas concentration. (If the stack NO₂ concentration is less than 5% of the stack NO concentration as determined using the emission test procedures under Section 7, the NO₂ stability check is not required. However, the NO₂ cell shall be calibrated in accordance with the manufacturer's instructions, the pretest calibration error check and post test calibration error check shall be conducted in accordance with Section 7, and the test results shall be added to the NO test values to obtain a total NO_x concentration.)

6.4.1 Stability Check Procedure. Inject the span gas for the maximum nominal range to be used during the emission testing into the analyzer and record the analyzer response at least once per minute until the conclusion of the stability check. One-minute average values may be used instead of instantaneous readings. After the analyzer response has stabilized, continue to flow the span gas for at least a 30-minute stability check period. Make no adjustments to the analyzer during the stability check except to maintain constant flow. Record the stability time as the number of minutes elapsed between the start of the gas injection and the start of the 30-minute stability check period. As an alternative, if the concentration reaches a peak value within five minutes, you may choose to record the data for at least a 15-minute stability check period following the peak.

6.4.2 Stability Check Calculations. Determine the highest and lowest concentrations recorded during the 30-minute period and record the results on Form B. The absolute value of the difference between the maximum and minimum values recorded during the 30-minute period must be less than 3.0 percent of the span gas concentration. Alternatively, record stability check data in the same manner for the 15-minute period following the peak concentration. The difference between the maximum and minimum values for the 15-minute period must be less than 2.0 percent of the span gas concentration.

7. EMISSION TEST PROCEDURES. Prior to performing the following emission test procedures, calibrate/challenge all electrochemical cells in the analyzer in accordance with the manufacturer's instructions.

7.1 Pre/Post-Catalyst Sampling. Select a pre-catalyst, if required, and post catalyst sampling site that will provide continuous uninterrupted exhaust gas flow. Use a sampling location at a single point near the center of the duct.

7.2 Warm Up Period. Assemble the sampling system and allow the analyzer and sample interface to warm up and adjust to ambient temperature at the location where the stack measurements will take place.

7.3 Pretest Calibration Error Check. Conduct a zero and span calibration error check before testing each new source. Conduct the calibration error check near the sampling location just prior to the start of an emissions test. Keep the analyzer in the same location until the post test calibration error check is conducted.

7.3.1 Scrubber Inspection. For analyzers that use an external interference gas scrubber tube, inspect the condition of the scrubbing agent and ensure it will not be exhausted during sampling. If scrubbing agents are recommended by the manufacturer, they should be in place during all sampling, calibration and performance checks.

7.3.2 Zero and Span Procedures. Inject the zero and span gases using the calibration assembly. Ensure the calibration gases flow through all parts of the sample interface. During this check, make no adjustments to the system except those necessary to achieve the correct calibration gas flow rate at the analyzer. Set the analyzer flow rate to the value recommended

by the analyzer manufacturer. Allow each reading to stabilize before recording the result on Form C. The time allowed for the span gas to stabilize shall be no less than the stability time noted during the stability check. After achieving a stable response, disconnect the gas and briefly purge with ambient air.

7.3.3 Response Time Determination. Determine the NO and CO response times by observing the time required to respond to 95 percent of a step change in the analyzer response for both the zero and span gases. Note the longer of the two times as the response time. For the NO₂ span gas record the time required to respond to 90 percent of a step change.

7.3.4 Failed Pretest Calibration Error Check. If the zero and span calibration error check results are not within the specifications in Section 4, take corrective action and repeat the calibration error check until acceptable performance is achieved.

7.4 NO Cell Temperature Monitoring. Record the initial NO cell temperature during the pretest calibration error check on Form C and monitor and record the temperature regularly (at least once each 7 minutes) during the sample collection period on Form D. If at any time during sampling, the NO cell temperature is 85 degrees F or greater and has increased or decreased by more than 5 degrees F since the pretest calibration, stop sampling immediately and conduct a post test calibration error check per Section 7.6, re-zero the analyzer, and then conduct another pretest calibration error check per Section 7.3 before continuing. (It is recommended that testing be discontinued if the NO cell exceeds 85 degrees F since the design

characteristics of the NO cell indicate a significant measurement error can occur as the temperature of the NO cell increases above this temperature. From a review of available data, these errors appear to result in a positive bias of the test results.)

Alternatively, manufacturer's documentation may be submitted showing the analyzer is configured with an automatic temperature control system to maintain the cell temperature below 85 degrees F (30 degrees centigrade) and provides automatic temperature reporting any time this temperature is exceeded. If automatic temperature control/exceedance reporting is used, test data collected when the NO cell temperature exceeds 85 degrees F is invalid.

7.5 Sample Collection. Position the sampling probe at the first sample point and begin sampling at the same rate used during the calibration error check. Maintain constant rate sampling (± 10 percent of the analyzer flow rate value used in Section 7.3.2) during the entire test. Sample for an equal period of time at each sample point. Sample the stack gas for at least twice the response time or the period of the stability time, whichever is greater, before collecting test data at each sample point. A 21 minute period shall be considered a test for each source. Where required (4-stroke lean-burn equipped with an oxidation catalyst) two consecutive 21 minute samples, one pre-catalyst and one post catalyst, shall be considered a test for each source. Data collection should be performed for an equal amount of time at each sample point and for a minimum of 21 minutes total. The concentration data must be recorded either (1) at least once each minute, or (2) as a block average for the

test using values sampled at least once each minute. Do not break any seals in the sample handling system until after the post test calibration error check (this includes opening the moisture removal system to drain condensate).

7.6 Post Test Calibration Error Check. Immediately after the test, conduct a zero and span calibration error check using the procedure in Section 7.3. Conduct the calibration error check at the sampling location. Make no changes to the sampling system or analyzer calibration until all of the calibration error check results have been recorded. If the zero or span calibration error exceeds the specifications in Section 4, then all test data collected since the previous calibration error check are invalid. If the sampling system is disassembled or the analyzer calibration is adjusted, repeat the pretest calibration error check before conducting the next test.

7.7 Interference Check. Use the post test calibration error check results and average emission concentrations for the test to calculate interference responses (I_{NO} and I_{CO}) for the CO and NO cells. If an interference response exceeds 5 percent, all emission test results since the last successful interference test for that compound are invalid.

7.7.1 CO Interference Response.

$$I_{CO} = \left[\left(\frac{R_{CO-NO}}{C_{NOG}} \right) \left(\frac{C_{NOS}}{C_{COS}} \right) + \left(\frac{R_{CO-NO_2}}{C_{NO_2G}} \right) \left(\frac{C_{NO_2S}}{C_{COS}} \right) \right] \times 100$$

where: I_{CO} = CO interference response (percent)
 R_{CO-NO} = CO response to NO span gas (ppm CO)
 C_{NOG} = concentration of NO span gas (ppm NO)

C_{NO_S} = concentration of NO in stack gas (ppm NO)
 C_{CO_S} = concentration of CO in stack gas (ppm CO)
 R_{CO-NO_2} = CO response to NO₂ span gas (ppm CO)
 C_{NO_2G} = concentration of NO₂ span gas (ppm NO₂)
 C_{NO_2S} = concentration of NO₂ in stack gas (ppm NO₂)

7.7.2 NO Interference Response.

$$I_{NO} = \left(\frac{R_{NO-NO_2}}{C_{NO_2G}} \right) \left(\frac{C_{NO_2S}}{C_{NO_xS}} \right) \times 100$$

where: I_{NO} = NO interference response (percent)
 R_{NO-NO_2} = NO response to NO₂ span gas (ppm NO)
 C_{NO_2G} = concentration of NO₂ span gas (ppm NO₂)
 C_{NO_2S} = concentration of NO₂ in stack gas (ppm NO₂)
 C_{NO_xS} = concentration of NO_x in stack gas (ppm NO_x)

7.8 Re-Zero. At least once every three hours, recalibrate the analyzer at the zero level according to the manufacturer's instructions and conduct a pretest calibration error check before resuming sampling. If the analyzer is capable of reporting negative concentration data (at least 5 percent of the span gas below zero), then the tester is not required to re-zero the analyzer.

8. DATA COLLECTION. This section summarizes the data collection requirements for this protocol.

8.1 Linearity Check Data. Using Form A, record the analyzer responses in ppm NO, NO₂, and CO, and percent O₂ for the zero, mid-level, and span gases injected during the linearity check under Section 6.2.2. To evaluate any interferences, record the analyzer responses in ppm CO to the NO and NO₂ span gases and the

analyzer response in ppm NO to the NO₂ span gas. Calculate the CO and NO interference responses using the equations under Sections 7.7.1 and 7.7.2, respectively, and estimated stack gas CO, NO and NO₂ concentrations.

8.2 Stability Check Data. Record the analyzer response at least once per minute during the stability check under Section 6.4.1. Use Form B for each pollutant (NO, NO₂, and CO). One-minute average values may be used instead of instantaneous readings. Record the stability time as the number of minutes elapsed between the start of the gas injection and the start of the 30-minute stability check period. If the concentration reaches a peak value within five minutes of the gas injection, you may choose to record the data for at least a 15-minute stability check period following the peak. Use the information recorded to determine the analyzer stability under Section 6.4.2.

8.3 Pretest Calibration Error Check Data. On Form C, record the analyzer responses to the zero and span gases for NO, NO₂, CO, and O₂ injected prior to testing each new source. Record the calibration zero and span gas concentrations for NO, NO₂, CO, and O₂. For NO, NO₂ and CO, record the absolute difference between the analyzer response and the calibration gas concentration, divide by the span gas concentration, and multiply by 100 to obtain the percent of span. For O₂, record the absolute value of the difference between the analyzer response and the O₂ calibration gas concentration. Record whether the calibration is valid by comparing the percent of span or difference between the calibration gas concentration and analyzer O₂ response, as applicable, with the specifications under Section 4.1 for the

zero calibrations and Section 4.2 for the span calibrations. Record the response times for the NO, CO, and NO₂ zero and span gases as described under Section 7.3.3. Select the longer of the two times for each pollutant as the response time for that pollutant. Record the NO cell temperature during the pretest calibration.

8.4 Test Data. On Form D-1, D-2, or D-3, record the source operating parameters during the test. Record the test start and end times. Record the NO cell temperature after one third of the test (e.g., after seven minutes) and after two thirds of the test (e.g., after 14 minutes). From the analyzer responses recorded each minute during the test, obtain the average flue gas concentration of each pollutant. These are the uncorrected test results.

8.5 Post Test Calibration Error Check Data. On Form C, record the analyzer responses to the zero and span gases for NO, NO₂, CO, and O₂ injected immediately after the test. To evaluate any interferences, record the analyzer responses in ppm CO to the NO and NO₂ span gases and the analyzer response in ppm NO to the NO₂ span gas. Record the calibration zero and span gas concentrations for NO, NO₂, CO, and O₂. For NO, NO₂ and CO, record the absolute difference between the analyzer response and the calibration gas concentration, divide by the span gas concentration, and multiply by 100 to obtain the percent of span. For O₂, record the absolute value of the difference between the analyzer response and the O₂ calibration gas concentration. Record whether the calibration is valid by comparing the percent of span or difference between the calibration gas concentration and analyzer O₂ response, as

applicable, with the specifications under Section 4.1 for the zero calibrations and Section 4.2 for the span calibrations. (If the pretest and post test calibration error check results are not within the limits specified in Sections 4.1 and 4.2, data collected during the test is invalid and the test must be repeated.) Record the NO cell temperature during the post test calibration. Calculate the average of the monitor readings during the pretest and post test calibration error checks for the zero and span gases for NO, NO₂, CO, and O₂. The pretest and post test calibration error check results are used to make the calibration corrections under Section 9.1. Calculate the CO and NO interference responses using the equations under Sections 7.7.1 and 7.7.2, respectively and measured stack gas CO, NO and NO₂ concentrations.

8.6 Corrected Test Results. Correct the test results using the equation under Section 9.1. Add the corrected NO and NO₂ concentrations together to obtain the corrected NO_x concentration. Calculate the emission rates using the equations under Section 10 for comparison with the emission limits. Record the results on Form D-1, D-2, or D-3. Sign the certification regarding the accuracy and representation of the emissions from the source.

9. CALIBRATION CORRECTIONS

9.1 Emission Data Corrections. Emissions data shall be corrected for a test using the following equation. (Note: If the pretest and post test calibration error check results are not within the limits specified in Sections 4.1 and 4.2, the test results are invalid and the test must be repeated.)

$$C_{Corrected} = (C_R - C_O) \frac{C_{MA}}{C_M - C_O}$$

where: $C_{Corrected}$ = corrected flue gas concentration (ppm)
 C_R = flue gas concentration indicated by gas analyzer (ppm)
 C_O = average of pretest and post test analyzer readings during the zero checks (ppm)
 C_M = average of pretest and post test analyzer readings during the span checks (ppm)
 C_{MA} = actual concentration of span gas (ppm)

10. EMISSION CALCULATIONS

10.1 Emission Calculations for Reciprocating Engines. Emissions shall be calculated and reported in grams per horsepower hour (gm/hp-hr) units. EPA Reference Method 19 shall be used as the basis for calculating the emissions. As an alternative, EPA Reference Methods 1-4 may be used to obtain a stack volumetric flow rate. Emissions shall be calculated using the following methods.

10.1.1 Reciprocating Engines Equipped with Fuel Meters. EPA Reference Method 19 and heat input per hour (MMBtu/hr) shall be used to calculate a pound per hour emission rate. Heat input per hour shall be based on the average hourly fuel usage rate during the test and the higher heating value of the fuel consumed. The emission rates shall be calculated using the following equations.

$$lb/hr CO = (ppm CO_{corrected})(7.27 \times 10^{-8})(F Factor_{Note 1}) \left(\frac{20.9}{20.9 - O_2\%_{corrected}} \right) (Heat Input Per Hour_{Note 2})$$

$$lb/hr NO_x = (ppm NO_x_{corrected})(1.19 \times 10^{-7})(F Factor_{Note 1}) \left(\frac{20.9}{20.9 - O_2\%_{corrected}} \right) (Heat Input Per Hour_{Note 2})$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas

composition and higher heating value of the fuel.

Note 2 - Heat input per hour (MMBtu/hr) shall be based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed.

10.1.2 Reciprocating Engines Not Equipped with Fuel Meters. If reciprocating engines are not equipped with fuel flow meters during the test, emissions shall be calculated using the site-rated horsepower and default specific fuel consumption factors, based on the higher heating value of the fuel, of 9,400 Btu/hp-hr for 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines and 11,000 Btu/hp-hr for 2-cycle uncontrolled (non-lean burn) engines. The following equations shall be used to calculate emissions.

$$\text{lb/MMBtu NO}_x = (\text{ppm NO}_x \text{ corrected})(1.19 \times 10^{-7})(F \text{ Factor}_{\text{Note 1}})\left(\frac{20.9}{20.9 - \text{O}_2\% \text{ corrected}}\right)$$

$$\text{lb/MMBtu CO} = (\text{ppm CO}_{\text{corrected}})(7.27 \times 10^{-8})(F \text{ Factor}_{\text{Note 1}})\left(\frac{20.9}{20.9 - \text{O}_2\% \text{ corrected}}\right)$$

$$\text{lb/hr NO}_x = (\text{lb/MMBtu NO}_x)(\text{Heat Input}_{\text{Note 2}})$$

$$\text{lb/hr CO} = (\text{lb/MMBtu CO})(\text{Heat Input}_{\text{Note 2}})$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and higher heating value of the fuel.

Note 2 - Default Specific Fuel Consumption (Btu/hp-hr) shall be as defined above for the particular type of engine tested.

10.1.3 Emission Rate Conversion From Pound per Hour to Grams per Horsepower-Hour

If the reciprocating engine horsepower can be derived from operating conditions during the portable analyzer test, this derived horsepower should be used to calculate a gram per horsepower hour emission rate using the following equations.

Information showing the derivation of the horsepower shall be provided with the test results.

$$gm/hp - hr CO = \frac{(lb/hr CO)(454)}{(Tested Horsepower_{Note 1})}$$

$$gm/hp - hr NO_x = \frac{(lb/hr NO_x)(454)}{(Tested Horsepower_{Note 1})}$$

Note 1 - Horsepower determined during the test.

If the reciprocating engine horsepower during the time of testing cannot be determined from the operating data, the operating horsepower for the time of the test shall be calculated based on the heat input per hour during the test and the default values shown below for specific fuel consumption based on the higher heating value of the fuel. Heat input per hour (MMBtu/hr) shall be calculated based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed. For 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines, use a default specific fuel consumption of 9,400 Btu/hp-hr. For 2-cycle uncontrolled (non-lean burn) engines, use a default specific fuel consumption of 11,000 Btu/hp-hr. Calculate the gram per horsepower hour emission rates using the following equations.

$$Engine\ Horsepower = \frac{(Heat\ Input\ Per\ Hour_{Note 1})(10^6)}{(Specific\ Fuel\ Consumption_{Note 2})}$$

$$gm/hp - hr NO_x = \frac{(lb/hr NO_x)(454)}{(Engine\ Horsepower)}$$

$$gm/hp - hr CO = \frac{(lb/hr CO)(454)}{(Engine\ Horsepower)}$$

Note 1 - Heat input per hour (MMBtu/hr) shall be based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed.

Note 2 - Default Specific Fuel Consumption (Btu/hp-hr) shall be as defined above for the particular type of engine tested.

10.2 Concentration Normalization to 15% O₂ For reporting purposes measured NO_x and CO concentration will be normalized to 15% O₂.

$$ppm\ CO_{@15\%O_2} = ppm\ CO_{corrected} \left(\frac{5.9}{20.9 - O_2\%_{corrected}} \right)$$

$$ppm\ NOx_{@15\%O_2} = ppm\ NOx_{corrected} \left(\frac{5.9}{20.9 - O_2\%_{corrected}} \right)$$

10.3 CO Control Efficiency Calculations For Lean-Burn Engines Equipped with Oxidation Catalyst. Actual CO control efficiencies will be calculated using the following calculation.

$$\%Control = \frac{ppmCO_{pre} - ppmCO_{post}}{ppmCO_{pre}} \times 100$$

where: $ppmCO_{pre}$ = pre catalyst flue gas concentration (ppm)
 $ppmCO_{post}$ = post catalyst flue gas concentration (ppm)

11. REPORTING FORMS

Test reports shall be submitted to the EPA . A separate test report shall be submitted for each emission source tested and, at a minimum, the following information shall be included:

- **Form A, Linearity Check Data Sheet,** Submit the linearity check as required by Section 6.2 for the nominal range tested.
- **Form B, Stability Check Data Sheet,** Submit the stability check as required by Section 6.4 for the nominal range tested.
- **Form C, Calibration Error Check Data Sheet**
- **Form D-1 or D-2,** Submit the appropriate test results form for type of source tested.
- If the manufacturer's specific fuel consumption is used, documentation from the manufacturer shall be submitted.
- If the horsepower is calculated during the test, information showing the derivation of the horsepower shall be included.

Form A

Linearity Check Data Sheet

Date: _____

Analyst: _____

Analyzer Manufacturer/Model #: _____

Analyzer Serial #: _____

LINEARITY CHECK								
Pollutant	Calibration Gas Concentration (Indicate Units)	Analyzer Response ppm NO	Analyzer Response ppm NO ₂	Analyzer Response ppm CO	Analyzer Response % O ₂	Absolute Difference (Indicate Units)	Percent of Span	Linearity Valid (Yes or No)
NO	Zero							
	Mid							
	Span							
NO ₂	Zero							
	Mid							
	Span							
CO	Zero							
	Mid							
	Span							
O ₂	Zero							
	Mid							
	Span							

Form B
Stability Check Data Sheet

Date: _____ Analyst: _____
 Analyzer Manufacturer/Model #: _____
 Analyzer Serial #: _____

Pollutant: NO, NO₂, CO (Circle One) Span Gas Concentration (ppm): _____

STABILITY CHECK					
Elapsed Time (Minutes)	Analyzer Response	Elapsed Time (Continued)	Analyzer Response	Elapsed Time (Continued)	Analyzer Response
1		17		33	
2		18		34	
3		19		35	
4		20		36	
5		21		37	
6		22		38	
7		23		39	
8		24		40	
9		25		41	
10		26		42	
11		27		43	
12		28		44	
13		29		45	
14		30		46	
15		31		47	
16		32		48	

For 30-minute Stability Check Period:

Maximum Concentration (ppm): _____

Minimum Concentration (ppm): _____

For 15-minute Stability Check Period:

Maximum Concentration (ppm): _____

Minimum Concentration (ppm): _____

Maximum Deviation = $100 * (\text{Max. Conc.} - \text{Min. Conc.}) / \text{Span Gas Conc.}$ = _____ percent

Stability Time (minutes): _____

Form C Calibration Error Check Data Sheet

Company: _____

Facility: _____

Source Tested: _____

Date: _____

Analyst: _____

Analyzer Serial #: _____

Analyzer Manufacturer/Model #: _____

PRETEST CALIBRATION ERROR CHECK

		A	B	A-B	A-B /SG*100			
		Pump Flow Rate (Indicate Units)	Analyzer Reading (Indicate Units)	Calibration Gas Concentration (Indicate Units)	Absolute Difference (Indicate Units)	Percent of Span Note 1	Calibration Valid (Yes or No)	Response Time (Minutes)
NO	Zero							
	Span							
NO ₂	Zero							
	Span							
CO	Zero							
	Span							
O ₂	Zero							
	Span							
		Pretest Calibration NO Cell Temperature (°F):						

SG = Span Gas

POST TEST CALIBRATION ERROR CHECK

		A	B	A-B	A-B /SG*100		Interference Check			
		Pump Flow Rate (Indicate Units)	Analyzer Reading (Indicate Units)	Calibration Gas Concentration (Indicate Units)	Absolute Difference (Indicate Units)	Percent of Span Note 1	Calibration Valid (Yes or No)	Average of Pretest and Post Test Analyzer Readings (Indicate Units)	NO Monitor Response (ppm)	CO Monitor Response (ppm)
NO	Zero									
	Span									
NO ₂	Zero									
	Span									
CO	Zero									
	Span									
O ₂	Zero									
	Span									
		Post Test Calibration NO Cell Temperature (°F):								
		CO Interference Response (I _{CO} , %):				NO Interference Response (I _{NO} , %):				

SG= Span Gas

Note 1: The percent of span calculation is applicable to the NO, NO₂ and CO channels only.

Form D-1
Reciprocating Engine Test Results

Company: _____ Facility: _____

Source Tested: _____ Date: _____

Source Manufacturer/Model #: _____

Site-rated Horsepower: _____ Source Serial #: _____

Type of Emission Control: _____

Analyst: _____ Analyzer Serial #: _____

Analyzer Manufacturer/Model #: _____

Operating Conditions

Source operating at 90 percent or greater site-rated horsepower during testing? yes no

Suction/Discharge Pressures (Indicate Units)	Engine RPM	Compressor Gas Throughput (Indicate Units)	Engine Fuel Consumption (Indicate Units)	Fuel Heat Content (Btu/cf)	Engine Specific Fuel Consumption (Btu/hp-hr) ¹	Engine Tested Horsepower

¹ As reported by the

Manufacturer

Test Results

Test Start Time: _____ NO Cell Temperature (°F) after 1/3 (e.g., 7 minutes) of the test: _____

Test End Time: _____ NO Cell Temperature (°F) after 2/3 (e.g., 14 minutes) of the test: _____

NO _x (NO + NO ₂)								
Avg. Tested NO ppm	NO _{corrected} ppm	Avg. Tested NO ₂ ppm	NO ₂ corrected ppm	NO _x corrected ppm	Tested gm/hp-hr	Tested lb/hr	Allowable gm/hp-hr	NO _x ppm @ 15% O ₂

O ₂		CO					
Avg. Tested O ₂ %	O ₂ corrected %	Avg. Tested CO ppm	CO _{corrected} ppm	Tested gm/hp-hr	Tested lb/hr	Allowable gm/hp-hr	CO ppm @ 15% O ₂

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

Print Name

Signature

Form D-2
Oxidation Catalyst Efficiency Results
For Lean-Burn Engines Equipped with Oxidation Catalysts

Company: _____ Facility: _____

Source Tested: _____ Date: _____

Source Manufacturer/Model #: _____

Site-rated Horsepower: _____ Source Serial #: _____

Type of Emission Control: _____

Analyst: _____ Analyzer Serial #: _____

Analyzer Manufacturer/Model #: _____

Operating Conditions

Source operating at 90 percent or greater site-rated horsepower during testing? yes no

Suction/Discharge Pressures (Indicate Units)	Engine RPM	Compressor Gas Throughput (Indicate Units)	Engine Fuel Consumption (Indicate Units)	Fuel Heat Content (Btu/cf)	Engine Specific Fuel Consumption (Btu/hp-hr) ¹	Engine Tested Horsepower

¹ As reported by the

Manufacturer

Test Results

Test Start Time: _____ NO Cell Temperature (°F) after 1/3 (e.g., 7 minutes) of the test: _____

Test End Time: _____ NO Cell Temperature (°F) after 2/3 (e.g., 14 minutes) of the test: _____

Avg. Tested O ₂ %	CO			
	Avg. Pre-Catalyst CO ppm	Avg. Post-Catalyst CO ppm	Tested CO reduction %	Required CO reduction %

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

 Print Name

 Signature

APPENDIX E

to the

Consent Decree

in the matter of

United States of America v. Wind River Resources Corporation & Bill Barrett Corporation

**WIND RIVER RESOURCES CORPORATION
PERFORMANCE OPTIMIZATION REVIEW**

WIND RIVER RESOURCES CORPORATION
SCOPE OF WORK FOR PERFORMANCE OPTIMIZATION REVIEW

Introduction

Within one year after the Effective Date of this Consent Decree, Wind River Resources Corporation (WRR) will conduct and complete a Performance Optimization Review (POR) of the North Hill Creek Compressor Station and two well-site facilities associated with the North Hill Creek Compressor Station.

The objective of the POR is to increase energy efficiency, enhance product recovery and reduce or minimize air emissions. WRR will retain a third-party consultant (consultant) acceptable to EPA to conduct the POR.

Scope of Work

This scope of work is limited to a review of the North Hill Creek Compressor Station (Station) and two well-site facilities (to be identified by WRR) associated with the Station. The consultant will review the following at the Station and each of the two identified wells:

Pressure Relief Devices
Production Separators
Dehydrators
Internal Combustion Engines
Flare and Vent Systems
Producing Wells
Operating Pressures
Component Inspections and Repairs

The consultant will visit each site identified by WRR and visually verify and document the presence of all components listed above, including the Station or well location, the date, time and personnel present. In addition, the consultant will conduct the following evaluations at the sites:

Pressure Relief Devices – Visually inspect and monitor pressure relief devices by using OVA, TVA, or other leak detection equipment to detect the presence of leaks from relief valves as

indicated by one of the following: 1) an instrument reading of 10,000 ppm or greater, 2) indication of liquids dripping, or 3) indication by a sensor that the seal or barrier fluid system has failed. (See 40 CFR § 60.481) Any leaking pressure relief valves will be repaired or replaced as soon as practicable to reduce product losses unless it is not technically practicable to do so without a process unit shut down. Please see Shutdown section below.

Review records, reports, performance tests and inspection methods and procedures for pressure relief devices and interview the field staff responsible for their operation, maintenance and testing at the sites. Provide written suggestions for potential procedural improvements.

Production Separators – Visually inspect the production separators, review records, reports, inspection methods and procedures and interview the field staff responsible for operation and maintenance of the separators at the sites. Identify optimal operating pressures and temperatures for the specific well and existing equipment to minimize product losses but be sufficient to allow production.

Dehydrators – Visually evaluate dehydrator processes including but not limited to glycol recirculation rate, flash tank pressure (if applicable), condenser temperature (if applicable), glycol circulation pump, associated control equipment such as flares. Review P & IDs, testing and inspection records and reports and interview the field staff responsible for operation and maintenance of the dehydrators at the sites. Identify potential changes to reduce or minimize product loss.

Internal Combustion Engines – Review existing maintenance practices and shutdown procedures and interview field staff. Identify site-specific opportunities for reducing venting and product loss from blow-down and the use of starter gas.

Flare and Vent Systems - Review existing flare and vent system components and associated operating procedures and written procedures if available to reduce the loss of product. Monitor for Leaks in vent systems by using OVA, TVA or equivalent. Identify reasonable alternatives if available given site-specific conditions.

Producing Wells – Review and document options for reducing gas losses, such as installing plunger lifts and performing "green completion" practices on new wells, where feasible given site-specific constraints based on discussions with WRR staff.

Operating Pressures – Evaluate and identify opportunities for improving product recovery within the current design of the system. Re-engineering of the system will not be included.

Component Inspections and Repairs - Visually inspect and monitor components by using OVA, TVA, or other leak detection equipment to detect the presence of leaks from components as indicated by one of the following: 1) an instrument reading of 10,000 ppm or greater, 2) indication of liquids dripping, or 3) indication by a sensor that the seal or barrier fluid system has failed. (See 40 CFR § 60.481) All leaking components will be repaired or replaced as soon as practicable to reduce product losses unless it is not technically practicable to do so without a process unit shut down. Please see Shutdown section below.

Facility Shutdown – The consultant will prepare a list of pressure relief valves and components that are not technically practicable to repair, replace, or otherwise make changes without shutting down the process units.

REPORT

The consultant will prepare and provide a final report for the Station and each of the two wells to WRR. WRR will submit a report to EPA, for each well site, with the consultant's report attached, that includes the following:

- a. the contractor(s) that performed the POR;
- b. the name, location, and original construction date of each of the well-site facilities and the compressor station at which the POR was conducted;
- c. a general description of the components by type and service that were inspected, how they were inspected, a summary and description of any repairs made, an estimate of natural gas conserved as a result of the repairs to the extent quantifiable, and the repair cost;
- d. a general description of the pressure relief devices that were inspected, how they were inspected, a summary description of any repairs made, an estimate of natural gas conserved as a result of the repairs to the extent quantifiable, and the repair cost;
- e. a description of the review of production separators, identification of those for which optimal pressures and temperatures were calculated and how that was done, a comparison of those values to prior separator operating conditions, a summary of the adjustments to pressures or temperatures that were made, an estimate of the amount of natural gas conserved as a result, and the cost if significant, to adjust pressures and temperatures;

- f. a description of the evaluation of dehydrators for the use of condensers, flares, and flash tanks; a summary of the projects identified as a result of such review for possible future implementation; if sufficient data exists to prepare an estimate, an estimate of the amount of natural gas potentially conserved if such projects were implemented, and the cost to implement such projects;
- g. a description of the review of RICE shutdown procedures to reduce blow down and the use of starter gas; a summary of any changes that were made based on such review; an estimate of product losses avoided as a result of any changes made, if reasonably capable of estimation; and the cost to implement such changes;
- h. a description of the review of flare and vent systems, a summary of the repairs made, if any; an estimate of the amount of natural gas conserved as a result of repairs made, and the cost to implement such repairs;
- i. a list of well names and locations at which plunger lift systems were installed, if any, or at which green completion procedures were followed; a description of any plunger lift system(s) used and the well condition(s) that made such system(s) practicable or how new well completion procedures were "green"; an estimate of the amount of natural gas conserved as a result of POR evaluations of certain producing wells, and the cost to implement any such systems and/or procedures; and
- j. a description of how operating pressures were evaluated and, where possible, optimized; an estimate of the amount of natural gas conserved as a result of such evaluation, and an estimate of the cost, if non-negligible, to optimize operating pressures.

APPENDIX F

to the

Consent Decree

in the matter of

**United States of America v. Wind River Resources Corporation & Bill Barrett
Corporation**

BILL BARRETT RESOURCES COPORATION

PEFORMANCE OPTIMIZATION REVIEW

BILL BARRETT CORPORATION
SCOPE OF WORK FOR PERFORMANCE OPTIMIZATION REVIEW

Introduction

If, within the time this Consent Decree is in effect, Bill Barrett Corporation (BBC) achieves ten operating wells in the Lake Canyon and Black Tail Ridge Tribal Exploration Agreement Areas ("Agreement Areas"); BBC will conduct a Performance Optimization Review (POR) of these well-site facilities located in the Agreement Areas.

The objective of the POR is to increase energy efficiency, enhance product recovery and reduce or minimize air emissions. BBC will retain a third-party consultant (consultant) acceptable to EPA to conduct the POR.

Scope of Work

This scope of work is limited to a review of the operating wells to be identified by BBC. The consultant will review the following at each well:

Pressure Relief Devices
Production Separators
Dehydrators
Internal Combustion Engines
Flare and Vent Systems
Producing Wells
Operating Pressures
Component Inspections and Repairs

The consultant will visit each site identified by BBC and visually verify and document the presence of all components listed above, including the well location, the date, time and personnel present. In addition, the consultant will conduct the following evaluations at the sites:

Pressure Relief Devices – Visually inspect and monitor pressure relief devices by using OVA, TVA, or other leak detection equipment to detect the presence of leaks from relief valves as indicated by one of the following: 1) an instrument reading of 10,000 ppm or greater, 2) indication of liquids dripping, or 3) indication by a sensor that the seal or barrier fluid system has

failed. (See 40 CFR § 60.481) Any leaking pressure relief valves will be repaired or replaced as soon as practicable to reduce product losses unless it is not technically practicable to do so without a process unit shut down. Please see Shutdown section below.

Review records, reports, performance tests and inspection methods and procedures for pressure relief devices and interview the field staff responsible for their operation, maintenance and testing at the sites. Provide written suggestions for potential procedural improvements.

Production Separators – Visually inspect the production separators, review records, reports, inspection methods and procedures and interview the field staff responsible for operation and maintenance of the separators at the sites. Identify optimal operating pressures and temperatures for the specific well and existing equipment to minimize product losses but be sufficient to allow production.

Dehydrators – Visually evaluate dehydrator processes including but not limited to glycol recirculation rate, flash tank pressure (if applicable), condenser temperature (if applicable), glycol circulation pump, associated control equipment such as flares. Review P & IDs, testing and inspection records and reports and interview the field staff responsible for operation and maintenance of the dehydrators at the sites. Identify potential changes to reduce or minimize product loss.

Internal Combustion Engines – Review existing maintenance practices and shutdown procedures and interview field staff. Identify site-specific opportunities for reducing venting and product loss from blow-down and the use of starter gas.

Flare and Vent Systems - Review existing flare and vent system components and associated operating procedures and written procedures if available to reduce the loss of product. Monitor for Leaks in vent systems by using OVA, TVA or equivalent. Identify reasonable alternatives if available given site-specific conditions.

Producing Wells – Review and document options for reducing gas losses, such as installing plunger lifts and performing "green completion" practices on new wells, where feasible given site-specific constraints based on discussions with BBC staff.

Operating Pressures – Evaluate and identify opportunities for improving product recovery within the current design of the system. Re-engineering of the system will not be included.

Component Inspections and Repairs - Visually inspect and monitor components by using OVA, TVA, or other leak detection equipment to detect the presence of leaks from components as indicated by one of the following: 1) an instrument reading of 10,000 ppm or greater, 2) indication of liquids dripping, or 3) indication by a sensor that the seal or barrier fluid system has failed. (See 40 CFR § 60.481) All leaking components will be repaired or replaced as soon as practicable to reduce product losses unless it is not technically practicable to do so without a process unit shut down. Please see Shutdown section below.

Facility Shutdown – The consultant will prepare a list of pressure relief valves and components that are not technically practicable to repair, replace, or otherwise make changes without shutting down the process units.

REPORT

The consultant will prepare and provide a final report for each well to BBC. BBC will submit a report to EPA, for each well site, with the consultant's report attached, that includes the following:

- a. the contractor(s) that performed the POR;
- b. the name, location, and original construction date of each of the well-site facilities and the compressor station at which the POR was conducted;
- c. a general description of the components by type and service that were inspected, how they were inspected, a summary and description of any repairs made, an estimate of natural gas conserved as a result of the repairs to the extent quantifiable, and the repair cost;
- d. a general description of the pressure relief devices that were inspected, how they were inspected, a summary description of any repairs made, an estimate of natural gas conserved as a result of the repairs to the extent quantifiable, and the repair cost;
- e. a description of the review of production separators, identification of those for which optimal pressures and temperatures were calculated and how that was done, a comparison of those values to prior separator operating conditions, a summary of the adjustments to pressures or temperatures that were made, an estimate of the amount of natural gas conserved as a result, and the cost if significant, to adjust pressures and temperatures;
- f. a description of the evaluation of dehydrators for the use of condensers, flares, and flash tanks; a summary of the projects identified as a result of such review for possible future

implementation; if sufficient data exists to prepare an estimate, an estimate of the amount of natural gas potentially conserved if such projects were implemented, and the cost to implement such projects;

- g. a description of the review of RICE shutdown procedures to reduce blow down and the use of starter gas; a summary of any changes that were made based on such review; an estimate of product losses avoided as a result of any changes made, if reasonably capable of estimation; and the cost to implement such changes;
- h. a description of the review of flare and vent systems, a summary of the repairs made, if any; an estimate of the amount of natural gas conserved as a result of repairs made, and the cost to implement such repairs;
- i. a list of well names and locations at which plunger lift systems were installed, if any, or at which green completion procedures were followed; a description of any plunger lift system(s) used and the well condition(s) that made such system(s) practicable or how new well completion procedures were "green"; an estimate of the amount of natural gas conserved as a result of POR evaluations of certain producing wells, and the cost to implement any such systems and/or procedures; and
- j. a description of how operating pressures were evaluated and, where possible, optimized; an estimate of the amount of natural gas conserved as a result of such evaluation, and an estimate of the cost, if non-negligible, to optimize operating pressures.