UNITED STATES DISTRICT COURT FOR THE DISTRICT OF UTAH NORTHERN DIVISION

UNITED STATES OF AMERICA	•
Plaintiff)	
v.)	Civil Action No.
MILLER, DYER & CO., L.L.C.	
and)	
CHICAGO ENERGY ASSOCIATES)	
and)	:
WHITING OIL AND GAS CORPORATION)	
Defendants)	
)	
))	;

CONSENT DECREE

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WHEREAS, Plaintiff, the United States of America, (the "United States") on behalf of the United States Environmental Protection Agency ("EPA"), has simultaneously with the lodging of this Consent Decree filed a Complaint alleging that Miller, Dyer & Co., L.L.C., a Colorado limited liability company ("Miller Dyer" and as more specifically defined below), and Chicago Energy Associates, a Delaware limited liability company ("CEA" and as more specifically defined below), violated requirements of the Clean Air Act (the "Act") and the federal regulations implementing the Act applicable to one existing compressor station referred to herein as the Flat Rock Compressor Station ("the Flat Rock Facility"), one former compressor station referred to herein as the Comet Pipeline Compressor Station ("the Comet Pipeline Facility"), and one existing hydrocarbon dewpoint control facility referred to herein as the Seep Ridge Interconnect Station ("the Seep Ridge Facility") which are located in the Uinta Basin near Vernal, Utah (the "Uinta Basin"), and located on Indian country lands in the State of Utah;

WHEREAS, EPA administers the Act's programs for National Emission Standards for Hazardous Air Pollutants ("NESHAP"), New Source Performance Standards ("NSPS"), and federal operating permits under Title V of the Act with respect to facilities located on Indian country lands in Utah;

WHEREAS, Miller Dyer was the previous operator of the Facilities subject to this Consent Decree, and CEA was the previous owner of the Facilities subject to this Consent Decree; Whiting Oil and Gas Corporation, a Delaware corporation ("Whiting" and as more specifically defined below), is the current operator and owner of the Facilities subject to this Consent Decree;

WHEREAS, on June 27, 2007, Miller Dyer disclosed to EPA that: (1) the Flat Rock Facility had the Potential to Emit ("PTE") greater than the major source thresholds of hazardous air pollutants and was subject to the Federal NESHAPs for oil and natural gas production facilities (40 C.F.R. Part 63, Subpart HH) and for reciprocating internal combustion engines (40 C.F.R. Part 63, Subpart ZZZZ); and was subject to the federal operating permit requirements of Title V of the Act; and (2) the Seep Ridge Facility had potential violations of the Federal NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants (40 C.F.R., Part 60, Subpart KKK). Miller Dyer also conducted a compliance evaluation of its former compressor station, the Comet Pipeline Facility, and disclosed to EPA on August 20, 2007, that the Comet Pipeline Facility, while in service, had a PTE greater than the major source thresholds of hazardous air pollutants and was subject to the Federal NESHAPs for oil and natural gas production facilities (40 C.F.R. Part 63, Subpart HH); and was subject to the federal operating permit requirements of Title V of the Act. Miller Dyer contends that its June 27, 2007 and August 20, 2007 disclosures were pursuant to EPA's policy titled "Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations" published at 65 Fed. Reg. 19,618 - 27 (April 11, 2000) (Audit Policy);

WHEREAS, Miller Dyer subsequently submitted an application for a Title V permit for the Flat Rock Facility to EPA and submitted notifications required under 40 C.F.R. Part 63. At the Flat Rock Facility, Miller Dyer has installed control or process equipment to comply with 40 C.F.R. Part 63 Subpart HH; has installed a condenser on the gas dehydration unit with condenser vent stream gasses being routed to the dehydration unit reboiler pilot and with flash tank emissions being routed to an enclosed flare; has installed a catalytic converter on the

reciprocating internal combustion engine to comply with 40 C.F.R. Part 63 Subpart ZZZZ; and has installed the necessary monitoring systems;

WHEREAS, on May 2, 2008, Miller Dyer and CEA plugged and abandoned the Oil Canyon Number 26-1A, API Number 43-04731180 oil and gas well, located in the SW1/4 of SE1/4 of Section 26, Township 14 South, Range 20 E, SLM, Uintah County, Utah;

WHEREAS, on May 30, 2008, Miller Dyer and CEA sold and transferred ownership and operation of the Uinta Basin Facilities to Whiting;

WHEREAS, as of May 31, 2008, Whiting is the owner and operator of the Flat Rock Facility and the Seep Ridge Facility subject to this Consent Decree;

WHEREAS, Miller Dyer, CEA, and Whiting (collectively referred to as "Defendants") do not admit the violations occurred and further do not admit any liability for civil penalties, fines, or injunctive relief to the United States arising out of the transactions or occurrences alleged in the Complaint;

WHEREAS, Miller Dyer, CEA, and Whiting have worked cooperatively with the Plaintiff to settle this matter;

WHEREAS, the United States, Miller Dyer, CEA, and Whiting (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 fair, reasonable, consistent with the goals of the Act and its implementing regulations, and that its entry is in the best interests of the Parties and is in the public interest;

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 Section 113(b) of the Act, 42 U.S.C. § 7413(b). Venue lies in this District pursuant to Section 113(b) of the Act, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b) & (c) and 1395(a), because the violations alleged in the Complaint are alleged to have occurred in, and Miller Dyer, CEA, and Whiting conduct business in, this judicial district.
- 2. The Uinta Basin Facilities are located on Indian country lands in Uintah County, Utah. For purposes of this Consent Decree or any action to enforce this Consent Decree, Miller Dyer, CEA, and Whiting consent to and will not contest the jurisdiction of the Court over this matter. For purposes of this Consent Decree, Miller Dyer, CEA, and Whiting agree that the Complaint states claims upon which relief may be granted pursuant to Section 113 of the Act, 42 U.S.C. §§ 7413.

II. APPLICABILITY

3. The obligations of this Consent Decree apply to and are binding upon the United States and upon Miller Dyer, CEA, and Whiting, as defined herein, and any of their successors and assigns.

- 4. Miller Dyer, CEA, and Whiting shall ensure that any of their corporate subsidiaries or affiliates that now or in the future may own or operate any of the Uinta Basin Facilities, or other natural gas production or gathering facilities 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 Miller Dyer, CEA, and Whiting may fully and timely comply with all requirements applicable to each as set forth in this Consent Decree.
- 5. In any action to enforce this Consent Decree, Miller Dyer, CEA, and Whiting shall not 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 provisions of this Consent Decree which are applicable to such Party unless or except as provided in Section XIII (Force Majeure).

III. DEFINITIONS

- 6. 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 Consent Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:
 - (a) "Clean Air Act" or "Act" shall mean the federal Clean Air Act, 42 U.S.C. § 7401 et seq., as last amended by the Clean Air Act Amendments of 1990, P.L. 101-549, November 15, 1990.
 - (b) "Code of Federal Regulations" or "C.F.R." unless otherwise noted shall refer to the 2007 codification.

- (c) "Consent Decree" or "Decree" shall mean this Consent Decree and all appendices attached hereto (listed in Section XXIX).
- (d) "Day" shall mean a calendar day unless expressly stated to be a business 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 business day.
- (e) "Miller Dyer" shall mean Miller, Dyer & Co., L.L.C., its subsidiaries, successors, and assigns.
- (f) "CEA" shall mean Chicago Energy Associates, its subsidiaries, successors, and assigns.
- (g) "EPA" shall mean the United States Environmental Protection Agency and any of its successor departments or agencies.
- (h) "HAP" shall mean hazardous air pollutant as provided under Section 112 of the Act.
- (i) "Indian country" shall refer to the definition of "Indian Country" at 18
 U.S.C. § 1151, 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;

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

- 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.
- (j) "Indian governing body" means the governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.
- (k) "Minor source" means a source that emits or has the potential to emit pollutants regulated under the Clean Air Act in amounts less than the Major stationary source levels specified in 40 C.F.R. § 52.21 or 40 C.F.R. § 63.2, as applicable.
- (l) "Non-major" source means a stationary source that is not a "major source" under the applicable provisions of 40 C.F.R. § 63.2 (general provisions), and the applicable source category "major source" definition or 40 C.F.R. § 63.761 (Subpart HH), or § 63.6675 (Subpart ZZZZ).
- (m) "Paragraph" shall mean a portion of this Consent Decree identified by an Arabic numeral.
- (n) "Performance Optimization Review" shall mean an evaluation of energy efficiency and the potential for product recovery at certain facilities for purposes of conserving natural gas and returning it to the marketplace.

- (o) "Plaintiff" shall mean the United States.
- (p) "Pneumatic Controller" shall mean a natural gas-driven pneumatic controller.
- (q) "RICE" shall mean one or more stationary, natural gas-fired Reciprocating
 Internal Combustion Engines.
- (r) "Section" shall mean a portion of this Consent Decree identified by a Roman numeral.
- (s) "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).
- (t) "TPY" shall mean tons per year.
- (u) "Uinta Basin Facilities" shall collectively mean the Flat Rock Compressor

 Station, the Seep Ridge Interconnect Station, and the Comet Pipeline

 Compressor Station, each of which is/was located in the Uinta Basin near

 Vernal, Utah, as more specifically described in Appendix A.
- (v) "Uinta Basin Properties" shall mean current and future oil and gas lease properties which are operated by Whiting in the area identified on the map shown in Appendix B which are located in Indian country within the Uinta Basin near Vernal, Utah.
- (w) "Whiting" shall mean Whiting Oil and Gas Corporation, its subsidiaries, successors, and assigns.

IV. EMISSION REDUCTION REQUIREMENTS

A. DEHYDRATION UNITS

Uinta Basin Existing Major Source

- 7. The gas dehydration unit located at the Flat Rock Facility is subject to "major source" standards under 40 C.F.R. Part 63, Subpart HH NESHAPs For Oil and Natural Gas Facilities (hereinafter "Subpart HH").
 - 8. [RESERVED.]
- 9. By letter dated December 4, 2007, Buys & Associates, on behalf of Miller Dyer, notified EPA that the enclosed flare controlling the flash tank emissions at the Flat Rock Facility had achieved emissions reductions in compliance with the major source requirements of Subpart HH. By this letter, Miller Dyer and/or CEA has provided a written notice to EPA and certified that the condenser vent stream routed to the pilot flame of the dehydration unit reboiler at the Flat Rock Facility was achieving emissions reductions in compliance with the major source requirements of Subpart HH as of May 30, 2008.
- 10. On and after the date of lodging of this Consent Decree, Whiting shall operate and maintain the gas dehydration unit at the Flat Rock Facility in compliance with applicable Subpart HH major source standards.
 - 11. [RESERVED.]
 - 12. [RESERVED.]
 - 13. [RESERVED.]
- 14. <u>General Record-Keeping Requirement</u>: Miller Dyer, CEA, and Whiting shall maintain records and information adequate to demonstrate their individual compliance with the

requirements of this Section IV.A.. Whiting shall report the status of its compliance with these requirements in its Annual Report submitted pursuant to Section XI (Reporting Requirements).

B. COMPRESSOR ENGINES

Uinta Basin Existing Major Source

15. The lean burn Reciprocating Internal Combustion Engine ("RICE") currently located at the Flat Rock Facility, as identified in Appendix A, is subject to 40 C.F.R. Part 63, Subpart ZZZZ – NESHAPs for Stationary Reciprocating Internal Combustion Engines as for major sources of HAP emissions (hereinafter "Subpart ZZZZ").

16. [RESERVED.]

- 17. (a) On and after the date of lodging of this Consent Decree, Whiting shall operate and maintain the RICE and catalytic converter so as to achieve and maintain the destruction efficiencies or emission limits specified in Subpart ZZZZ.
- (b) The oxidation catalyst shall meet a limit of 2.0 gram per horsepower hour (g/hp-hr) for carbon monoxide ("CO"), when the RICE is operating at a 90% load or higher.
- (c) The RICE shall be operated and maintained so as to meet a limit of 2.0 g/hp-hr for oxides of nitrogen ("NOx"), when the RICE is operating at a 90% load or higher.
- 18. By letter dated March 14, 2008, Buys & Associates, on behalf of Miller Dyer, notified EPA that the Flat Rock Facility was achieving emissions reductions as required to comply with the requirements of Subpart ZZZZ.
- 19. <u>General Record-Keeping Requirement</u>: Miller Dyer, CEA, and Whiting shall maintain records and information adequate to demonstrate their individual compliance with the

requirements of this Section IV.B. Whiting shall report the status of its compliance with these requirements in its Annual Reports submitted pursuant to Section XI (Reporting Requirements).

C. NATURAL GAS LIQUID STORAGE TANKS

<u>Uinta Basin Existing Non-Major Facility</u>

- 20. (a) Subject to Paragraph 20(b) below, Whiting shall, within 180 Days after the Effective Date of this Consent Decree, install, operate, and maintain a low pressure separator upstream of the two 400-barrel capacity atmospheric natural gas liquid storage tanks located at the Seep Ridge Interconnect Station ("the Seep Ridge Facility") and maintain a maximum operating pressure within such separator of 20 psig. Off-gasses from the low pressure separator are to be used as fuel in the on-site generator.
- (b) Whiting may, based on future operating needs, cease to operate and physically remove the hydrocarbon dewpoint skid from the Seep Ridge Facility. If the hydrocarbon dewpoint skid is removed prior to 180 Days after the Effective Date of this Consent Decree, Whiting shall not be required to install the low pressure separator as specified in Paragraph 20(a). Further, if the hydrocarbon dewpoint skid is removed after installation of the low pressure separator, Whiting shall no longer be required to operate the low pressure separator.
- 21. <u>General Record-Keeping Requirement</u>: Whiting shall maintain records and information adequate to demonstrate its compliance with the requirements of this Section IV.C (Natural Gas Liquid Storage Tanks), and shall report the status of its compliance with these requirements upon request by EPA.

D. HYDROCARBON DEWPOINT SKIDS

Uinta Basin Existing Non-Major Facility

- 22. The hydrocarbon dewpoint skid located at the Seep Ridge Facility is subject to NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants under 40 C.F.R., Part 60, Subpart KKK (hereinafter "Subpart KKK").
- 23. On or before the date of lodging of this Consent Decree, Miller Dyer, CEA and/or Whiting shall have implemented the Subpart KKK standards applicable to the hydrocarbon dewpoint skid at the Seep Ridge Facility.
- 24. (a) By no later than 30 Days after the date of lodging of this Consent Decree, Whiting shall provide a written notice to EPA and certify that the Seep Ridge Facility is in compliance with Subpart KKK. The 30 Days may be extended with written EPA approval.
- (b) If Whiting physically removes the hydrocarbon dewpoint skid from the Seep Ridge Facility pu rsuant to Paragraph 20(b), compliance with Subpart KKK standards applicable to the hydrocarbon dewpoint skid shall no longer be required.
- (c) By no later than 60 Days after the date of lodging of this Consent Decree, Whiting shall submit a request for an applicability determination to EPA Region 8 regarding the applicability of the Risk Management Plan requirements under the Chemical Accident Prevention provisions of 40 C.F.R. Part 68 with respect to the hydrocarbon liquids stored as a result of the dew-point skid processes at the Seep Ridge Facility.
- (d) Within 60 Days after receiving EPA's determination pursuant to this Paragraph, Whiting shall, if found to be applicable, submit a Risk Management Plan to EPA for such affected facility.
- 25. <u>General Record-Keeping Requirement</u>: Miller Dyer, CEA, and Whiting shall maintain records and information adequate to demonstrate their individual compliance with the

requirements of this Section IV.D (Hydrocarbon Dewpoint Skids), and shall report the status of their compliance with these requirements upon request by EPA.

E. PNEUMATIC CONTROLLERS

Existing High-Bleed Pneumatic Controllers

- 26. <u>Pneumatic Controller Survey:</u> By no later than 6 months after the date of lodging of this Consent Decree, Whiting shall complete a survey of the Uinta Basin Facilities, as identified in Appendix A, to identify and develop an approximate tally of the high-bleed Pneumatic Controllers in use at the Uinta Basin Facilities. By no later than 60 Days thereafter, Whiting shall report the findings of the Pneumatic Controller survey to EPA. For purposes of this Consent Decree, a "high-bleed" Pneumatic Controller is any Pneumatic Controller that has the capacity to bleed in excess of six standard cubic feet of natural gas per hour (52,560 scf/year) in normal operation.
- 27. Retrofits: By no later than 1 year after the date of lodging of this Consent Decree, Whiting shall retrofit or replace high-bleed Pneumatic Controllers, identified pursuant to the survey conducted under Paragraph 26, with "low-bleed" Pneumatic Controllers unless it is not technically or operationally feasible to retrofit or replace particular high-bleed Pneumatic Controllers. If Whiting is not able to retrofit or replace any particular high-bleed Pneumatic Controllers, Whiting shall identify each such Pneumatic Controller and document why each such Pneumatic Controller was not retrofitted or replaced with a low-bleed Pneumatic Controller. The 1 year may be extended with written EPA approval.

New Construction

- 28. Beginning on the date of lodging of this Consent Decree, and continuing for the life of this Consent Decree, Whiting shall install and operate low or no-bleed Pneumatic Controllers at all newly constructed facilities located on Uinta Basin Properties, as identified in Appendix B. Whiting need not, however, install low or no-bleed Pneumatic Controllers at sites for which Whiting can demonstrate that the use of low or no-bleed Pneumatic Controllers would not be technically or operationally feasible.
- 29. <u>General Record-Keeping Requirement</u>: Whiting shall maintain records and information adequate to demonstrate its compliance with the requirements of this Section IV.E (Pneumatic Controllers), and shall report the status of its compliance with these requirements upon request by EPA.

V. FUTURE DEVELOPMENT

A. DEHYDRATION UNITS

- 30. (a) For Dehydration Units constructed at compressor stations and oil and/or natural gas production facilities located on Uinta Basin Properties after the lodging of this Consent Decree, such Dehydration Units shall be subject to and comply with emission limitations and emission reduction controls to the extent applicable under Subpart HH.
- (b) Uncontrolled VOC emissions from a Dehydration Unit shall be determined by using GRI GLYCalc version 4.0 or higher. When conducting the analysis, the following data shall be used:

- i. results of a recent extended gas analysis from a representative field-specific sample of the stream entering the natural gas dehydrator contactor tower; and
- ii. the maximum lean glycol recirculation rate for the glycol circulation pump in use. If redundant pumps are used, the following conditions shall apply:
 - (A) the evaluation is performed using the maximum circulation rate of the largest volume pump;
 - (B) 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
 - 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 for wells not completed prior to twelve months before the Effective Date of this Consent Decree shall be estimated based on best engineering judgment considering existing wells in the area, and for wells completed at least twelve months prior to the Effective Date of this Consent Decree 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 (DOGM) or equivalent agency with jurisdiction.

(c) By no later than the due date of the next annual compliance certification date or 180 Days after startup, whichever is later, Whiting shall provide written notice to EPA and certify that each control/control system, if required to be installed pursuant to this Paragraph, is achieving emissions reductions sufficient that those Dehydration Units are in compliance with applicable requirements of Subpart HH. The 180 Days may be extended with written EPA approval.

B. RICE UNITS OF 500 HORSEPOWER OR GREATER

- 31. Beginning on the date of lodging of this Consent Decree, and continuing for so long as this Consent Decree is in effect, any RICE unit with an on-site nameplate rating of 500 horsepower ("hp") or greater located on Uinta Basin Properties shall be subject to and comply with emission limitations and emission reduction controls to the extent applicable under Subpart ZZZZ.
 - 32. [RESERVED.]
 - 33. [RESERVED.]
- 34. (a) As applicable, each RICE unit subject to Paragraph 31 shall comply with the following:
 - Each RICE unit shall be operated and maintained to achieve the destruction efficiency and/or the emission limits specified in Subpart ZZZZ.

- ii. By no later than 180 Days following the installation of a new catalyst controlled RICE, an initial emissions test of such catalyst to demonstrate compliance with the destruction efficiency and/or the emission limits specified in Paragraph 34(a)(i) must be performed, using either EPA approved reference methods or portable analyzers in accordance with the Test Protocol set forth in Appendix D.
- iii. If the catalyst fails to meet the destruction efficiency and/or the emission limits specified in Subpart ZZZZ, Whiting shall take appropriate steps to correct such non-compliance and retest the catalytic converter within 30 Days after the receipt of the initial test report. Whiting 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. The 60 Days may be extended with written EPA approval.
- iv. Upon successful demonstration that the catalyst has met the destruction efficiency and/or the emission limits specified in Subpart ZZZZ, Whiting shall thereafter test the catalytic converter emission control efficiency on a semi-annual calendar-year basis using either EPA approved reference methods or a portable analyzer in accordance with the Test Protocol set forth in Appendix D. The semi-annual test date may be extended with written EPA approval.
- (b) For each RICE unit with a nameplate rating of 500 hp or greater and subject to Paragraph 31 herein, Whiting shall submit a test report to EPA within 90 Days after each initial emission test is performed. The report shall contain the emission test results and the following information applicable to each RICE:
 - i. RICE make, model, nameplate hp rating, location, serial number, installation date and manufacturer emission data;

- ii. catalyst make, model, installation date and manufacturer emission data;
- iii. initial emission test results including date and times of test runs, name(s) of employee(s) or contractor(s) who conducted the test; performance data in compliance with 40 C.F.R.§ 63.6620 and with the applicable provisions of Subpart ZZZZ Tables 3 and 4;
- iv. a certification pursuant to Paragraph 52 of the information contained in the report in accordance with Section XI (Reporting Requirements).
- v. Whiting shall include all subsequent test results in the Annual Report submitted pursuant to Section XI (Reporting Requirements), as well as the information gathered pursuant to the preceding Paragraph 34(a)(iv), and shall maintain at the facility a catalyst 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 activities).
- 35. [RESERVED.]
- 36. [RESERVED.]

C. GENERAL RECORD-KEEPING REQUIREMENT

37. Whiting shall maintain records and information adequate to demonstrate its compliance with the requirements of this Section and shall report the status of its compliance with these requirements in its Annual Reports submitted pursuant to Section XI (Reporting Requirements).

VI. PERFORMANCE OPTIMIZATION REVIEW

38. Within one year after the Effective Date of this Consent Decree, Whiting shall complete a Performance Optimization Review ("POR") to increase energy efficiency and

enhance product recovery at two Uinta Basin Facilities in accordance with the Scope of Work ("SOW") attached as Appendix E. The POR shall be performed by third-party consultants acceptable to EPA. Whiting will notify EPA of the proposed third-party consultant at least 30 Days prior to initiating the POR.

- 39. The scope of the POR is expressly limited to the following activities, as set forth in the POR SOW:
- (a) Pressure Relief Devices repair or replace components, as appropriate, to specifically reduce product losses;
- (b) Production Separators identify optimal pressures and temperatures, and reset as needed;
 - (c) Dehydrators evaluate for use of electric pumps to reduce product losses;
- (d) Internal Combustion Engines evaluate maintenance practices and planned shutdown procedures to minimize product losses from blow down and the use of starter gas;
- (e) Flare and Vent Systems evaluate flare and vent system components and associated operating procedures to reduce the loss of product, where possible;
 - (f) Operating Pressures review and optimize, where possible; and
- (g) Component Inspections and Repairs perform component inspections using OVA, TVA, or other EPA-approved leak detection field equipment and repair or replace leaking components, as appropriate, to enhance product recovery.
- 40. POR Reports. Within 60 Days of completion of the POR, Whiting shall submit a POR Report to EPA for the Uinta Basin which shall include:

- (a) the contractor(s) used to conduct the POR;
- (b) the name, location and original construction date of each of the compressor stations 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 electric pumps; a summary of the projects identified as a result of such review for possible future implementation by Whiting 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; and
- (i) 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.
- EPA, any areas of non-compliance with the Act (including federal implementing regulations) that are discovered during the POR. Under this Paragraph, for other than PSD/NSR, Whiting shall include in its written submission: (1) a certification pursuant to Paragraph 52 that it has subsequently complied with all applicable statutory and regulatory requirements, or it shall propose a schedule for coming into compliance; (2) a description of the corrective measures taken, or proposed to be taken; and (3) a proposed calculation of Whiting's economic benefit, if any, pursuant to the EPA Stationary Source Civil Penalty Policy and BEN Model. EPA will review Whiting's certifications, 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 of the proposed corrective measures or economic benefit calculation(s), each, as applicable, 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. At EPA's discretion, the Parties will address any PSD/NSR violations

as a new and separate enforcement action. Whiting's release from liability as specified in Section XVI (Effect of Settlement/Reservation of Rights) for the areas of non-compliance identified and corrected pursuant to this Section VI will take effect upon the Plaintiff's written concurrence with Whiting's certification and its payment in full of any economic benefit indicated pursuant to this Paragraph. Any areas of non-compliance discovered by EPA and any disclosures by Whiting beyond this specific 120-Day period are not covered by this Paragraph.

VII. AMBIENT AIR MONITORING

- 42. (a) Miller Dyer and/or CEA shall fund the operation and maintenance of two ambient air quality and meteorological monitoring stations ("Monitoring Stations") located in the Uinta Basin and shall fund the collection and distribution of monitoring data for the two Monitoring Stations. The two Monitoring Stations shall be those installed and utilized pursuant to the Consent Decree in *United States v. Kerr-McGee Corporation* (D. Colo. Civil Action No. 07-cv-01034-WDMMJW). Miller Dyer and/or CEA shall fund the monitoring at the two Monitoring Stations for a consecutive time period to follow the completion of the monitoring period funded in the Kerr-McGee Consent Decree, for a period of one year. Beginning no later than 30 days after lodging of this Consent Decree, Miller Dyer and/or CEA shall enter into a contract for the operation and maintenance of the two Monitoring Stations. Miller Dyer and/or CEA shall select a contractor that is acceptable to EPA. The ambient air quality monitors shall monitor ozone, NOx and PM_{2.5} concentrations. The meteorological stations shall monitor wind speed, wind direction, temperature and solar radiation.
- (b) Miller Dyer and/or CEA shall work cooperatively with EPA, the Utah Department of Environmental Quality (UDEQ) and the Ute Indian Tribe of the Uintah and Ouray

Reservation (the "Northern Ute Tribe") regarding the operation and maintenance of the Monitoring Stations. The Monitoring Stations shall meet the methodology and operational requirements of 40 C.F.R. Part 58. Additional guidance for meteorological monitoring is contained in "Quality Assurance Handbook for Air Pollution Measurement Systems," Vol. IV, "Meteorological Measurements." All monitoring data shall be collected in a manner reasonably calculated to meet EPA's quality assurance/quality control ("QA/QC") requirements of 40 C.F.R. Part 58, App. A. Additional guidance is provided in "Quality Assurance Handbook for Air Pollution Measurement Systems."

- (c) Miller Dyer and/or CEA shall certify, in accordance with Paragraph 52, that it has met all the requirements of this Section VII. (Ambient Air Monitoring).
- (d) EPA, Miller Dyer and CEA intend and contemplate that Miller Dyer and/or CEA will utilize the two air monitoring sites on a turnkey basis, including but not limited to utilizing (i) the site access and rights of surface use for the two air monitoring sites, and (ii) the air monitoring equipment purchased pursuant to the Kerr McGee Consent Decree. In the event that the operational conditions in (i) and (ii) are not met, Miller Dyer and CEA, may demonstrate compliance with this provision by asserting and establishing a Force Majeure claim pursuant to Paragraphs 64 through 70.

VIII. LIMITS ON POTENTIAL TO EMIT

43. The requirements established in Sections IV.A and V.A (Dehydration Units), Sections IV.B and V.B (Compressor Engines/RICE), and IV.C (Natural Gas Liquid Storage Tanks) under this Consent Decree shall be considered "federally enforceable" and, as applicable,

"legally and practicably enforceable" for purposes of calculating the potential to emit ("PTE") of a source or facility as may be applicable under the Act and any implementing federal regulations.

- 44. The PTE for emissions of pollutants regulated under the Act from Dehydration Units at any facility in the Uinta Basin Properties shall be limited by the requirements set forth in Sections IV.A and V.A (Dehydration Units), and shall be federally enforceable on that basis.
- 45. The PTE for emissions of pollutants regulated under the Act for all RICE identified in Sections IV.B and V.B at any facility in the Uinta Basin Properties shall be limited by the requirements set forth therein, and shall be federally enforceable on that basis.

IX. TITLE V OPERATING PERMITS

46. As of the date of lodging of this Consent Decree, a complete Title V permit application has been submitted to EPA for the Flat Rock Facility. The United States agrees that the Flat Rock Facility shall be authorized to operate in accordance with the terms of this Consent Decree until such time as EPA has issued the Title V permit for the facility and this Consent Degree is terminated in whole or in part.

X. CIVIL PENALTY

- 47. Within 30 Days after the Effective Date of this Consent Decree, Miller Dyer or CEA shall pay to the Plaintiff a total civil penalty pursuant to Section 113 of the Act, 42 U.S.C. § 7413, in the amount of \$142,000. Miller Dyer or CEA shall pay interest on any overdue civil penalty at the rate specified in 28 U.S.C. § 1961; however, in the case of overdue payments, interest shall accrue from the date of entry until the date of payment.
- 48. Federal Payment Instructions: Miller Dyer or CEA shall make 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 90-5-2-1-09383. Payment shall be made in accordance with instructions provided by the USAO for the District of Utah, Northern Division. Any funds received after 11:00 a.m. (EST/EDT) shall be credited on the next business Day. Miller Dyer or CEA shall provide notice of payment, referencing the USAO File Number, DOJ Case Number 90-5-2-09383 and the civil case name and case number, to DOJ, EPA, and to Whiting, as provided in Section XIX (Notices).

49. No amount of the civil penalty to be paid by Miller Dyer or CEA shall be used to reduce its federal tax obligations.

XI. REPORTING REQUIREMENTS

- 50. Miller Dyer, CEA, and Whiting, as applicable, shall submit the following reports:
- (a) In compliance with any specific deadline requirement of this Consent Decree, Miller Dyer, CEA, and Whiting shall submit initial performance test results, retest reports, initial status reports, progress reports, final reports, and notices (this Paragraph is not a cumulative requirement) as applicable to each Party.
- (b) By no later than March 1 of each year, Whiting shall submit an Annual Report for the preceding calendar year to EPA. Whiting 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 Whiting performed on and after May 31, 2008 pursuant to any requirement of this Consent Decree during the applicable reporting period; (ii) transmit any specific (non-annual) reports required of Whiting and which are to be included in an Annual Report; (iii) describe Whiting's compliance status on and after May 31, 2008; and (iv) describe any non-compliance

with the requirements of this Consent Decree applicable to Whiting and explain the likely cause(s) of the violation(s) and the remedial steps taken, or to be taken, to prevent or minimize such violation(s).

- applicable, first becomes aware of any violation(s), or potential violation(s), or has reason to believe that it may violate, any requirement of this Consent Decree, Miller Dyer, CEA, and/or Whiting, as applicable, shall notify EPA of such violation(s), and its likely duration, in writing, with an explanation of the likely cause of such violation(s) and the remedial steps taken, or to be taken, to prevent or minimize such violation(s) should it occur. If the cause of a violation cannot be fully explained at the time the notification is due, Miller Dyer, CEA, and/or Whiting, as applicable, shall state this in the 10-Day notice, investigate the cause of each such violation in the event that it occurs, and within 30 Days of the date that Miller Dyer, CEA, and/or Whiting, as applicable, determine(s) such cause, submit a full written explanation of the cause of the violation. Nothing in this Paragraph relieves Miller Dyer, CEA, and/or Whiting of their obligation to provide the notice required by Section XIII (Force Majeure).
- 51. All reports shall be submitted to the persons designated in Section XIX (Notices) of this Consent Decree.
- 52. Each Annual Report submitted by Whiting shall be signed by a Responsible Official. All other reports or submissions may be signed by a delegated employee representative, unless otherwise required by applicable statute or regulation. All reports and submissions shall 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.

- 53. 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, Whiting 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 Whiting's Annual Reports, submitted pursuant to this Section XI (Reporting Requirements).
- 54. 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, except as provided in Section XVI (Effect of Settlement/Reservation of Rights) and/or for disclosures made pursuant to Paragraph 41 of this Consent Decree.

XII. STIPULATED PENALTIES

55. Miller Dyer, CEA, and Whiting shall be liable for stipulated penalties to the United States for violations of this Consent Decree as specified below, unless excused under Section XIII (Force Majeure), or reduced or waived by the Plaintiff pursuant to Paragraph 60 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) Dehydration Units (Sections IV.A and V.A).

	Violation	Stipulated Penalty	Responsible Party
1.	For failure to install and/or operate controls as required by Paragraphs 10 and 30 per unit per Day.	For each unit: \$1000 per Day for the first 30 Days of noncompliance, \$1500 per Day from the 31st to 60th Day of noncompliance, and \$2000 per Day thereafter.	Whiting
2.	For failure to maintain records and information as required by Paragraph 14.	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 \$1000 per Day thereafter.	Miller Dyer, CEA and/or Whiting, as applicable
3.	For failure to maintain records and information as required by Paragraph 37.	For each unit: \$200 per Day for the first 30 Days of noncompliance, \$500 per Day from the 31st to 60th Day of noncompliance, and \$1000 per Day thereafter.	Whiting

(b) Compressor Engines (Sections IV.B and V.B).

	Violation	Stipulated Penalty	Responsible Party
1.	For failure to maintain records and information as required by Paragraph 19.	For each unit: \$200 per Day for the first 30 Days of noncompliance, \$500 per Day from the 31st to 60th Day of noncompliance, and \$1000 per Day thereafter.	Miller Dyer, CEA and/or Whiting, as applicable
2.	For failure to comply with Subpart ZZZZ as required by Paragraphs 17, 31, and 34.	For each engine: \$1000 per Day for the first 30 Days of noncompliance, \$1500 per Day from the 31st to 60th Day of noncompliance, and \$2000 per Day thereafter.	Whiting
3.	For failure to conduct initial performance test on the RICE emission controls as required by Paragraph 34(a)(ii).	For each engine: \$500 per Day for the first 30 Days of noncompliance, \$1000 per Day from the 31st to 60th Day of noncompliance, and \$1500 per Day thereafter.	Whiting
4.	For failure to submit reports as required by Paragraph 34.	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 \$1000 per Day thereafter.	Whiting

(c) Natural Gas Liquid Storage Tanks (Section IV.C)

	Violation	Stipulated Penalty	Responsible Party
1.	For failure to install a low pressure separator as required by Paragraph 20.	\$100 per Day for the first 30 Days of noncompliance; \$250 per Day from the 31st to 60th Day of noncompliance, and \$500 per Day thereafter.	Whiting
2.	For failure to maintain records and information as required by Paragraph 21.	\$200 per Day for the first 30 Days of noncompliance, \$500 per Day from the 31st to 60th Day of noncompliance, and \$1000 per Day thereafter.	Whiting

(d) Hydrocarbon Dewpont Skids (Section IV.D)

	Violation	Stipulated Penalty	Responsible Party
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	Violation	Stipulated Penalty	Responsible Party
1.	For failure to implement the Subpart KKK standards applicable to the hydrocarbon dewpoint skid at the Seep Ridge Facility as required by Paragraph 23.	\$100 per Day for the first 30 Days of noncompliance; \$250 per Day from the 31st to 60th Day of noncompliance, and \$500 per Day thereafter.	Miller Dyer, CEA and/or Whiting, as applicable
2.	For failure to submit the notice as required by Paragraph 24(a).	\$200 per Day for the first 30 Days of noncompliance, \$500 per Day from the 31 st to 60 th Day of noncompliance, and \$1000 per Day thereafter.	Whiting
3.	For failure to submit a request for an applicability determination as required by Paragraph 24(b).	\$200 per Day for the first 30 Days of noncompliance, \$500 per Day from the 31 st to 60 th Day of noncompliance, and \$1000 per Day thereafter.	Whiting
4.	For failure to submit a Risk Management Plan, if applicable, pursuant to Paragraph 24(c).	\$200 per Day for the first 30 Days of noncompliance, \$500 per Day from the 31 st to 60 th Day of noncompliance, and \$1000 per Day thereafter.	Whiting
5.	For failure to maintain records and information as required by Paragraph 25.	\$200 per Day for the first 30 Days of noncompliance, \$500 per Day from the 31 st to 60 th Day of noncompliance, and \$1000 per Day thereafter.	Miller Dyer, CEA and/or Whiting, as applicable

(e) Pneumatic Controllers (Section IV.E)

	Violation	Stipulated Penalty	Responsible Party
1.	For failure to complete the Survey and submit a Report on existing high-bleed Pneumatic Controllers, as required by Paragraph 26.	\$200 per Day for the first 30 Days of noncompliance; \$500 per Day from the 31st to 60th Day of noncompliance, and \$1000 per Day thereafter.	Whiting
2.	For failure to retrofit high-bleed Pneumatic Controllers as required by Paragraph 27.	For each device that is not retrofitted: \$100 per Day for the first 30 Days of noncompliance; \$250 per Day from the 31st to 60th Day of noncompliance, and \$500 per Day thereafter.	Whiting

(f) Ambient Air Monitoring (Section VII.)

	Violation	Stipulated Penalty	Responsible Party
1.	For failure to fund, operate, maintain and certify the Monitoring Stations as required by Paragraph 42.	\$200 per Day for the first 30 Days of noncompliance; \$500 per Day from the 31st to 60th Day of noncompliance, and \$1000 per Day thereafter.	Miller Dyer and/or CEA

56. Late Payment of Civil Penalty: If Miller Dyer and/or CEA fails to pay the civil penalty required to be paid under Section X (Civil Penalty) of this Consent Decree when due,

Miller Dyer and/or CEA shall pay a stipulated penalty of \$1,000 per Day for each Day that the payment is late.

- 57. 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.
- Dyer, CEA, and/or Whiting, as applicable, shall pay any stipulated penalty within 30 Days of receipt of written demand of the United States and shall continue to make such payments every 30 Days thereafter until the violation(s) no longer continue, unless Miller Dyer, CEA, and/or Whiting, as applicable, elects within 20 Days of receipt of written demand from the United States to dispute the accrual of stipulated penalties in accordance with the provisions in Section XIV (Dispute Resolution) of this Consent Decree.
- 59. All stipulated penalties shall be paid in accordance with the payment instructions set forth in Paragraph 48.
- 60. The United States may, in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due under this Consent Decree.
- 61. Stipulated penalties shall continue to accrue as provided in Paragraph 57 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 or by a decision of the Plaintiff pursuant to Section XIV (Dispute Resolution) of this Consent Decree that is not appealed to the Court, Miller Dyer, CEA, and/or Whiting, as applicable, shall pay accrued stipulated penalties

and accrued interest agreed or determined to be owing within 30 Days of the effective date of such agreement or the receipt of Plaintiff's decision.

- (b) If the dispute is appealed to the Court, and the Plaintiff prevails in whole or in part, Miller Dyer, CEA, and/or Whiting, as applicable, 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 Subparagraph (c), below.
- (c) If either Party appeals the Court's decision, Miller Dyer, CEA, and/or Whiting, as applicable, 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.
- 62. Miller Dyer, CEA, and Whiting shall not deduct stipulated penalties paid under this Section XII in calculating its federal or state income tax.
- 63. Subject to the provisions of Section XVI (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 Miller Dyer, CEA's, and/or Whiting'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, Miller Dyer, CEA, and/or Whiting shall be allowed a dollar-for-dollar credit, for any stipulated penalties paid, against any statutory penalties imposed for such violation.

XIII. FORCE MAJEURE

64. If any event occurs which causes or may cause a delay or impediment to performance in complying with any provision of this Consent Decree (e.g., would require

operation in an unsafe manner), and which Miller Dyer, CEA, and/or Whiting believes qualifies as an event of *Force Majeure*, Miller Dyer, CEA, and/or Whiting, as applicable, shall notify the Plaintiff in writing as soon as practicable, but in any event within 45 Days of when Miller Dyer, CEA, and/or Whiting, as applicable, first knew of the event or should have known of the event by the exercise of reasonable diligence. In this notice Miller Dyer, CEA, and/or Whiting, as applicable, 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 to prevent or minimize the delay and the schedule by which those measures will be implemented. Miller Dyer, CEA, and/or Whiting, as applicable, shall adopt all reasonable measures to avoid or minimize such delays.

- 65. Failure by Miller Dyer, CEA, and/or Whiting to substantially comply with the notice requirements of Paragraph 64, as specified above, shall render this Section voidable by the Plaintiff, as to the specific event for which Miller Dyer, CEA, and/or Whiting has failed to comply with such notice requirement. If so voided, this Section shall be of no effect as to the particular event and Party involved.
- 66. The Plaintiff shall notify Miller Dyer, CEA, and/or Whiting, as applicable, in writing regarding its agreement or disagreement with any claim of a Force Majeure event within 45 Days of receipt of each Force Majeure notice provided under Paragraph 64.
- 67. If the Plaintiff agrees that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Miller Dyer, CEA, and/or Whiting, as applicable, including any entity controlled or contracted by it, and that the delay could not have been prevented by the exercise of reasonable diligence, the Plaintiff and the indicated Party 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 by agreement of the Parties pursuant to the modification procedures established in this Consent Decree. Miller Dyer, CEA, and/or Whiting shall not be liable for stipulated penalties for the period of any such delay.

68. If the Plaintiff does not agree that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Miller Dyer, CEA, and/or Whiting, as applicable, including any entity controlled or contracted by it, the position of the Plaintiff on the Force Majeure claim shall become final and binding, and Miller Dyer, CEA, and/or Whiting, as applicable, shall pay the applicable stipulated penalties, unless Miller Dyer, CEA, and/or Whiting, as applicable, submits the matter to the Court for resolution by filing a petition for determination with the Court within 20 business Days after receiving the written notification of the Plaintiff as set forth in Paragraph 64. Once Miller Dyer, CEA, and/or Whiting has submitted such matter to the Court, the Plaintiff shall have 20 business Days to file a response to the petition. If Miller Dyer, CEA, and/or Whiting submits the matter to the Court for resolution and the Court determines that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Miller Dyer, CEA, and/or Whiting, including any entity controlled or contracted by such Party, and that it could not have prevented the delay by the exercise of reasonable diligence, Miller Dyer, CEA, and/or Whiting, as applicable, shall be excused as to such 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.

- 69. Miller Dyer, CEA, and/or Whiting, as applicable, 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 it, and that it could not have prevented the delay by the exercise of reasonable diligence. Miller Dyer, CEA, and/or Whiting, as applicable, 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 Miller Dyer, CEA, and/or Whiting, as applicable.
- 70. As part of the resolution of any matter submitted to the Court under this Section, the applicable 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 Plaintiff or approval by the Court is based. Miller Dyer, CEA, and/or Whiting, as applicable, 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 XIII.

XIV. DISPUTE RESOLUTION

- 71. 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.
- This Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Miller Dyer, CEA, and/or Whiting sends the Plaintiff 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 applicable Parties cannot resolve a dispute by informal negotiations, then the position advanced by the Plaintiff shall be considered binding unless, within 20 Days after the conclusion of the informal negotiation period, Miller Dyer, CEA, and/or Whiting, as applicable, invoke(s) formal dispute resolution procedures as set forth below.
- 73. <u>Formal Dispute Resolution</u>: Miller Dyer, CEA, and/or Whiting may only invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the Plaintiff a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but may not necessarily be limited to, any factual data, analysis, or opinion supporting Miller Dyer, CEA, and/or Whiting's position and any supporting documentation relied upon by Miller Dyer, CEA, and/or Whiting.
- 74. The Plaintiff shall serve its Statement of Position within 30 Days of receipt of Miller Dyer, CEA, and/or Whiting's Statement of Position. The Plaintiff's 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 Plaintiff. The Plaintiff's Statement of Position shall be binding on Miller Dyer, CEA, and/or Whiting, as applicable, unless Miller Dyer, CEA, and/or Whiting, as applicable, file(s) a motion for judicial review of the dispute in accordance with Paragraph 75.

- 75. Miller Dyer, CEA, and/or Whiting may seek judicial review of the dispute by filing with the Court and serving on the Plaintiff, in accordance with Section XIX of this Consent Decree (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 30 Days of receipt of the Plaintiff's Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Miller Dyer, CEA, and/or Whiting's position 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.
- 76. The Plaintiff shall respond to any motion requesting judicial resolution of the dispute within the time period allowed by the Local Rules of the Court. Miller Dyer, CEA, and/or Whiting, as applicable, may file a reply memorandum, to the extent permitted by the Local Rules and allowed by the Court.
- 77. Except as otherwise provided in this Consent Decree, in any dispute brought under Paragraph 75, Miller Dyer, CEA, and/or Whiting, as applicable, shall bear the burden of demonstrating that its position complies with this Consent Decree.
- 78. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation under this Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the

disputed matter shall continue to accrue from the first Day of alleged noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 61. If Miller Dyer, CEA, and/or Whiting, as applicable, do not prevail on the disputed issue, stipulated penalties shall be assessed against and paid by the applicable Party as provided in Section XII (Stipulated Penalties).

XV. INFORMATION COLLECTION AND RETENTION

- 79. 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 proper credentials, for the purpose of monitoring compliance with any provision 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.
- 80. Miller Dyer, CEA, and/or Whiting, as applicable, shall be entitled to: (1) splits of samples, where feasible, and (2) copies of any sampling and analytical results, documentary evidence and data obtained by the United States pursuant to Paragraph 79 of this Consent Decree.
- 81. Miller Dyer, CEA, and Whiting shall retain, and shall instruct their contractors and agents to retain, for a period of five (5) years after each record is generated or created by each of them copies of all records, test results, or monitoring information required of each Party pursuant to this Consent Decree. Records of monitoring information also includes calibration

and maintenance records, original strip-chart recordings for continuous monitoring, and copies of all reports required by the Consent Decree or applicable regulations. Such documents, records, or other information may be kept in electronic form. 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, Miller Dyer, CEA, and Whiting shall provide copies of any non-privileged documents, records, or other information required to be maintained by each Party under this Paragraph.

- 82. [Reserved.]
- 83. Miller Dyer, CEA, and/or Whiting may assert that certain documents, records, or other information is privileged under the attorney-client privilege or any other privilege recognized by federal and/or state law. If Miller Dyer, CEA, or Whiting asserts such a privilege, it 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. However, no final documents, records or other information that Miller Dyer, CEA, or Whiting is explicitly required to create or generate to satisfy a specific requirement of this Consent Decree shall be withheld on the grounds of privilege.
- 84. Miller Dyer, CEA, and/or Whiting may also assert that information required to be provided under this Section is protected as Confidential Business Information ("CBI") under 40 C.F.R. Part 2. As to any information that Miller Dyer, CEA, and/or Whiting seeks to protect as CBI, Miller Dyer, CEA, and/or Whiting shall follow the procedures set forth in 40 C.F.R. Part 2.

Decree shall relieve Miller Dyer, CEA, and/or Whiting of its obligation to achieve and maintain full compliance with all applicable federal, State, and local laws, regulations, and permits. The United States does not, by its consent to the entry of this Consent Decree, warrant or aver in any manner that Miller Dyer, CEA, and/or Whiting's compliance with any aspect of this Consent Decree will result in compliance with other provisions of the Act or its implementing regulations or with any other provisions of federal, State, or local laws, regulations, or permits.

- 89. This Consent Decree does not limit or affect the rights of CEA, Miller Dyer, Whiting, or the United States against any third parties, not party to this Consent Decree, nor does it limit the rights of third parties, not party to this Consent Decree, against Miller Dyer, CEA, or Whiting, except as provided herein or as otherwise provided by law.
- 90. This Consent Decree shall not be construed to create any rights in, or grant any cause of action to, any third party not a party to this Consent Decree.

XVII. EMISSION REDUCTION CREDIT GENERATION

91. Miller Dyer, CEA, and/or Whiting shall not generate or use any NOx, CO or VOC emission reductions that result from any projects conducted pursuant to this Consent Decree as credits or offsets in any PSD, major non-attainment and/or minor New Source Review ("NSR") permit or permit proceeding. The foregoing notwithstanding, Miller Dyer, CEA, and/or Whiting, as applicable, may conduct projects pursuant to this Consent Decree that create more emission reductions of NOx, CO or VOCs than are required for these pollutants by the underlying applicable requirement(s). In such instances, Miller Dyer, CEA, and/or Whiting, as applicable, may retain a portion of the achieved emissions reductions for use as credits or offsets. All other emission sources of NOx, CO or VOCs, and any netting associated with other

pollutants, are outside the scope of these netting limitations and are subject to PSD/NSR applicability as implemented by the appropriate permitting authority or EPA. Use of emission reductions in netting and as offsets in any PSD, major non-attainment and/or minor NSR permit or permit proceeding pursuant to the limitations herein shall be further limited by the applicable regulations, and by the PSD, major non-attainment, and/or minor NSR permit(s) in question, as applicable.

XVIII. COSTS

92. 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 reasonable attorneys' fees) incurred in any action in which it is the prevailing party and which is necessary to collect any portion of the civil penalty or any stipulated penalties if due.

XIX. NOTICES

93. Unless otherwise specified herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and mailed or hand delivered 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 Miller Dyer and CEA:

John L. Dyer Miller Dyer & Co. LLC 475 Seventeenth Street, Suite 1200 Denver, CO 80202

As to Whiting:

James T. Brown Senior Vice President Whiting Oil and Gas Corporation 1700 Broadway, Suite 2300 Denver, CO 80290-2300

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

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

XX. SALES OR TRANSFERS OF OWNERSHIP/OPERATOR INTERESTS

- 96. [RESERVED.]
- 97. Miller Dyer and CEA shall be solely liable for, and may not assign, transfer, or be released from, the following obligations under this Consent Decree:
- (a) Fund, operate, maintain and certify the Monitoring Stations in accordance with Section VII (Ambient Air Monitoring).
 - (b) Payment of the civil penalty in accordance with Section X (Civil Penalty),
- (c) Payment of any stipulated penalties in accordance with Section XII (Stipulated Penalties) which are based on Miller Dyer and/or CEA's failure to comply or timely comply with obligations under this Consent Decree, and
- (d) Maintain documents and/or provide reports with respect to applicable obligations of this Consent Decree in accordance with Sections XI (Reporting Requirements) and XV (Information Collection and Retention).
- 98. If Whiting proposes to sell or transfer all or part of its ownership in any of the Uinta Basin Facilities or if Whiting proposes to transfer its responsibility as operator of any of the Uinta Basin Facilities, except for individual wells or groups of wells and associated wellhead facilities, to any entity unrelated to Whiting, Whiting 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 XIX (Notices) of this Consent Decree at least 30 Days before such proposed sale or transfer.

- 99. No sale or transfer of ownership or operational authority to a Third Party shall take place before the Third Party consents in writing, by a stipulation to be filed with the Court, to: (a) accept all of the obligations, terms and conditions of this Consent Decree applicable to Uinta Basin Facilities, exclusive of wellhead facilities, that are subject to any unperformed or outstanding requirement of this Consent Decree applicable to Whiting; (b) the jurisdiction of the Court to enforce the terms of this Consent Decree as to such party; and (c) become a party to this Consent Decree. Notwithstanding such a sale or transfer to a Third Party, Whiting shall remain jointly and severally liable with the Third Party for performance of those requirements of this Consent Decree applicable to Whiting unless the Consent Decree is modified or Whiting's joint and several liability is restricted in accordance with Paragraph 103.
- 100. If the United States agrees, Whiting and the Third Party may execute a modification to this Consent Decree that relieves Whiting of its liability under this Consent Decree for, and makes the Third Party liable for, all obligations and liabilities applicable to Whiting for the purchased or transferred facilities and/or operator responsibility. Notwithstanding the foregoing, Whiting may not assign, and may not be released from, obligations under this Consent Decree to pay stipulated penalties with respect to actions occurring subsequent to the Effective Date of this Consent Decree and prior to the date of transfer of ownership or operator responsibility in accordance with Section XII (Stipulated Penalties). Whiting may propose, and the United States may agree, to restrict the scope of the joint and several liability of any purchaser or transferee for any obligations applicable to Whiting

under this Consent Decree that are not specific to the transferred or purchased facilities and/or operator responsibility, to the extent such obligations may be adequately separated in an enforceable manner.

XXI. EFFECTIVE DATE

101. 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.

XXII. RETENTION OF JURISDICTION

102. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Decree pursuant to Section XIV (Dispute Resolution) or entering, partially terminating or terminating orders modifying this Decree, pursuant to Sections XX (Sales or Transfers of Ownership/Operator Interests), XXIII (Modification), and XXIV (Termination), or otherwise effectuating, or enforcing compliance with, the terms of this Consent Decree.

XXIII. MODIFICATION

103. The terms of this Consent Decree, including any attached appendices, may be modified only by a subsequent written agreement. Any such agreement shall be signed by the United States and the Party/Parties responsible for performance of the underlying obligation of this Consent Decree sought to be modified. With respect to any modification that constitutes a material change to this Consent Decree, such written agreement shall be filed with the Court and effective only upon the Court's approval. Any modification of a reporting requirement of this Consent Decree shall be deemed a non-material modification/change. Any disputes concerning

modification of this Consent Decree shall be resolved pursuant to Section XIV (Dispute Resolution) of this Consent Decree.

XXIV. TERMINATION

- 104. This Consent Decree shall remain in effect for a period of five (5) years after the Date of Lodging of this Consent Decree or until otherwise terminated or partially terminated in accordance with the provisions of this Section.
- 105. CEA, Miller Dyer, and Whiting may serve upon the United States a Request for Termination or Partial Termination of this Consent Decree at any time after the Effective Date. The Request for Termination or Partial Termination shall certify that Miller Dyer, CEA, and/or Whiting, as applicable, has paid any applicable civil penalty and all stipulated penalties, if any, that have accrued, and has fulfilled all other obligations of this Consent Decree applicable to such Party.
- 106. Where a control requirement, recordkeeping requirement, reporting requirement or other requirement of this Consent Decree is incorporated into a federally enforceable permit, Whiting may serve upon the United States a Request for Partial Termination. Upon approval of such request by the Plaintiff, the filing of a joint stipulation by Plaintiff and Whiting and the Court's approval in accordance with Paragraph 103, the Consent Decree provision in question shall be superseded and terminated by the corresponding permit provision, which shall govern as the applicable requirement.
- 107. Following receipt by the United States of Miller Dyer, CEA, and/or Whiting's Request for Termination or Partial Termination, the Plaintiff and Miller Dyer, CEA, and/or Whiting, as applicable, shall confer informally concerning the Request for Termination or Partial

Termination and any disagreement as to whether the relevant Party or Parties has/have satisfactorily complied with the requirements for termination or partial termination of this Consent Decree. If the United States agrees that the Consent Decree may be terminated or partially terminated, the Plaintiff and the relevant Party or Parties shall submit, for the Court's approval, a joint stipulation terminating or partially terminating the Consent Decree.

108. If the United States does not agree that the Consent Decree may be terminated or partially terminated, the Party or Parties submitting either the Request for Termination or Partial Termination may immediately appeal the disposition of its Request to the Court.

XXV. PUBLIC PARTICIPATION

109. 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. Miller Dyer, CEA, and Whiting 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, unless the United States has notified Miller Dyer, CEA, and Whiting in writing that it no longer supports entry of the Consent Decree.

XXVI. SIGNATORIES/SERVICE

110. Each undersigned representative of Miller Dyer, CEA, Whiting, and the Assistant Attorney General for the Environment and Natural Resources Division of DOJ certifies that he or

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

- 111. Miller Dyer, CEA, and Whiting each represent that they have authority to legally obligate their corporate subsidiaries or affiliates 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.
- 112. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. The Parties agree to accept service of process by mail pursuant to the provisions of Section XIX (Notices) 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. The Parties further agree that Miller Dyer, CEA, and Whiting need not file a responsive pleading to the complaint in this action unless or until the Court expressly declines to enter this Consent Decree as written and acknowledged by the Parties hereto. If the Court so declines to enter this Consent Decree, Miller Dyer, CEA, and Whiting shall have 60 days from the date of such Court Order to answer or otherwise plead or move in response to Plaintiff's Complaint.

XXVII. INTEGRATION

113. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding between the Parties with respect to the settlement of matters addressed in the Decree, and supersedes all prior agreements and understandings, whether oral or written, concerning such matters. Other than the appendices listed in Section XXIX (Appendices), which

are attached to and incorporated in this Consent Decree, and deliverables that are subsequently submitted and approved pursuant to this Decree, no other document, representation, inducement, agreement, understanding, or promise constitutes any part of this Decree or the settlement it memorializes, nor shall evidence of any such document, representation, inducement, agreement, understanding or promise be used in construing the terms of this Consent Decree.

XXVIII. FINAL JUDGMENT

114. 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, Miller Dyer, CEA, and Whiting.

XXIX. APPENDICES

- A. Uinta Basin Facilities
- B. Uinta Basin Properties

Dated and entered this

C. Existing Whiting Compressor Stations & Oil and Natural Gas Production Facilities

2009.

- D. Test Protocol for Portable Analyzers
- E. Scope of Work for Performance Optimization Review
- F. June 27, 2007, Self-Disclosure Letter

Day of

G. August 20, 2007, Self-Disclosure Letter

UNITED STATES DISTRICT JUDGE
District of Utah

FOR PLAINTIFF, UNITED STATES OF AMERICA

JOHN C. CRUDEN

Acting Assistant Attorney General

Environment & Natural Resources Division

950 Pennsylvania Avenue, N.W.

Room 2143

Washington, D.C. 20530

Date Mar. 19, 2009

Date

DIANNE M. SHAWLEY

Senior Counsel

Environmental Enforcement Section

Environment and Natural Resources Division

U.S. Department of Justice

601 D Street, N.W.

Washington, D.C. 20004

Phone: (202) 514-0096

Fax: (202) 616-6583

dianne.shawley@usdoj.gov

OF COUNSEL:

JAMES H. EPPERS

Legal Enforcement Program

Office of Enforcement, Compliance, and Environmental Justice

U.S. Environmental Protection Agency, Region 8

1595 Wynkoop Street

Denver, CO 80202-1129

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 31 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

FOR DEFENDANTS, MILLER, DYER & CO., L.L.C AND CHICAGO ENERGY ASSOCIATES:

John E. Dyer, Manager

Miller, Dyer & Co., LLO

475 Seventeenth Street, Suite 1200

Denver, CO 80202

Phone: (303) 292-0949, ext 103

Fax: (303) 292-3901

Date: 12/3/2008

Miller, Dyer & Co., LLC Manager Chicago Energy Associates

By: John E. Dyer

475 Seventeenth Street, Suite 1200

Denver, CO 80202

Phone: (303) 292-0949, ext 103

Fax: (303) 292-3901

FOR DEFENDANT,
WHITING OIL AND GAS CORPORATION

JAMES T. BROWN Senior Vice President Date: 12/3/08

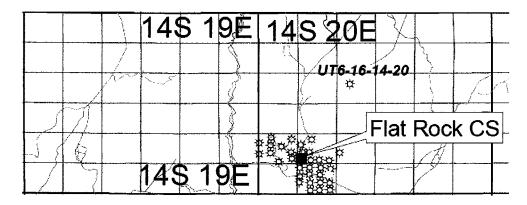
APPENDIX A

"UINTA BASIN FACILITIES"

1. FLAT ROCK COMPRESSOR STATION:

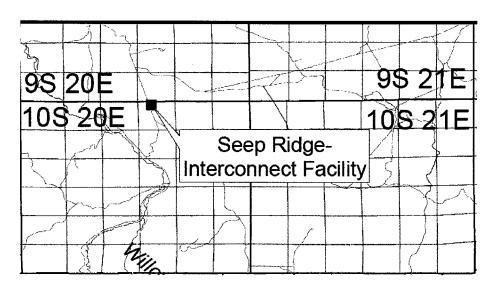
Lat. 39.56560 – Long. -109.70889 Sect. 29, Township 14 South, Range 20 East

Uintah County, Utah



2. SEEP RIDGE INTERCONNECT STATION/FACILITY:

Lat. 39.98242 – Long. -109.65375 Northeast ¼ of the Northwest ¼ Section 3, Township 10 South, Range 20 East Uintah County, Utah



3. COMET PIPELINE COMPRESSOR STATION:

Facility was shut down on February 22, 2005 and was subsequently dismantled.

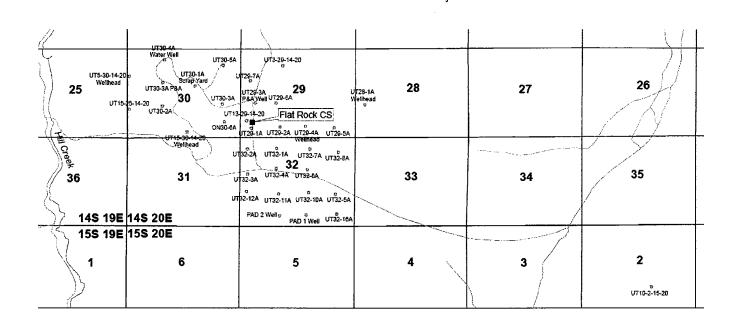
APPENDIX B

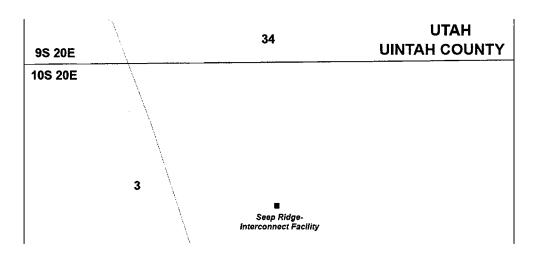
"UINTA BASIN PROPERTIES"

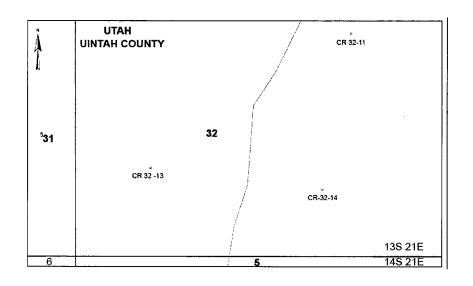
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APPENDIX C

EXISTING WHITING COMPRESSOR STATIONS & OIL AND NATURAL GAS PRODUCTION FACILITIES







APPENDIX D

TEST PROTOCOL FOR PORTABLE ANALYZERS



Air Pollution Testing, Inc. Portable Monitoring Protocol

(1) This protocol was modeled from the State of Wyoming, Department of Environmental Quality Portable Monitoring Protocol and the EPA Conditional Test Method 030, and adapted for the equipment, methods and Personnel of Air Pollution Testing, Inc.

> DENVER OFFICE 5530 Marshall Street Arvada, CO 80002 (303) 420-5949 FAX (303) 420-5920 (800) 268-6213



1. APPLICABILITY AND PRINCIPLE

- 1.1 Applicability: This method is applicable to the determination of nitrogen oxides (NO_x) , carbon monoxide (CO), and oxygen (O_2) concentrations in controlled and uncontrolled emissions from natural gas-fired reciprocating engines, combustion turbines, boilers, and process heaters using portable analyzers with electrochemical cells.
- 1.2 Principle: A gas sample is continuously extracted from an exhaust stack and conveyed to a portable analyzer for determination of NO_x (NO and NO_2), CO, and O_2 gas concentrations using electrochemical cells. Analyzer design specifications, performance specifications, and test procedures are provided to ensure reliable data.

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 and 2.1.2.
- 2.1.1 CO and NO Span Gases: A span gas concentration will be selected so that the average stack gas reading for each test is greater than 25 percent of the span gas concentration.

 Alternatively, a span gas will be selected so that it is not greater than 3.33 times the concentration equivalent to the emission standard. If the average results of the concentration exceed 125 percent of the span gas during the test, then the test for that pollutant is invalid.
- 2.1.2 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 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.
- 3.1.3 Data Recorder: The analyzers will 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: 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.
- 3.5 Span Calibration Error: 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.
- 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.
- 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 glas 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.
- 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 30 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 and CO channels and less than or equal to 0.3 percent O_2 for the O_2 channel.
- 4.2 Span Calibration Error: Less than or equal to 5 percent of the span gas value for NO and CO channels and less than or equal to 0.5 percent O_2 for the O_2 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 O_2 cells.
- 4.5 Stability Check Response: The analyzer responses to CO and NO 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.

5. APPARATUS AND REAGENTS:

5.1 Measurement System: 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. The essential components of the measurement system are described below:



- 5.1.1 Sample Probe: Glass, stainless steel, or other non-reactive material, of sufficient length to sample per the requirements of Section 7.
- 5.1.2 Heated Sample Line: Heated (sufficient to prevent condensation) non-reactive tubing such as teflon, stainless steel, glass, etc. to transport the sample gas to the moisture removal system.
- 5.1.3 Sample Transport Lines: Non-reactive 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 where the probe attaches to the sample line to introduce calibration gases at ambient pressure during the calibration error checks.
- 5.1.5 Moisture Removal System: A chilled condenser 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 non-reactive 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 non-reactive to the gas being sampled.
- 5.1.8 Sample Flow Rate Control: A sample flow rate control valve to maintain a constant sampling rate during sampling and calibration error checks. The components shall be fabricated of materials that are non-reactive to the gas being sampled.
- 5.1.9 Gas Analyzer: A Testo model 350 containing electrochemical cells to determine the NO, CO, and O_2 concentrations in the sample gas stream. (Note: The analyzer will be housed in a clean, thermally-stable, vibration-free environment to minimize drift in the analyzer calibration.)
- 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 and NO, 0.1 percent O_2 for O_2 ; and one degree (C or F) for temperature.



- 5.1.11 NO Cell Temperature Indicator: A thermocouple will 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.
- 5.1.12 Dilution Systems: The use of dilution systems will be used when necessary, to protect the life and integrity of the EC cell.
- $5.1.13~NO_x$ converter oven: An oven used to convert NO_2 to NO will be used during sampling to provide a total nitrogen oxides (NO_x) result.
- 5.2 Calibration Gases: The CO and NO calibration gases for the gas analyzer shall be CO in nitrogen and NO in nitrogen. The mid-level O_2 gas shall be O_2 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 O_2 cell as specified in Section 2.1.2.
- 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 and NO zero gases.

6. MEASUREMENT SYSTEM PERFORMANCE CHECK PROCEDURES:

- 6.1 Calibration Gas Concentration Certification: For the mid-level and span cylinder gases, calibration gases certified according to EPA Protocol 1 procedures will be used. 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. As an alternative, calibration gasses that are NIST Traceable and certified to +/- 2% may be used.
- 6.2 Linearity Check: The following procedure will be conducted once for each nominal range to be used on each electrochemical cell (NO, CO, and O_2). 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 re-accomplished. Additionally, the linearity check will be repeated if the cell is replaced.



6.2.1 Linearity Check Gases: For each the following gases will be obtained: 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: After calibrating the analyzer with zero and span gases, injection of the zero, mid-level, and span gases will be used that are appropriate for each nominal range on each cell. For each gas injection, the analyst will verify that the flow rate is constant and the analyzer responses have stabilized before recording the responses.

6.3 Interference Check: A CO cell response to the NO span gas during the linearity check may indicate interferences. If this cell response is observed during the linearity check, it may be desirable to quantify the CO cell response to the NO span gas during the linearity check and use estimated stack gas CO and NO concentrations to evaluate whether or not the portable analyzer will meet the post test interference check requirements of Section 7.7. The 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: The following procedure will be conducted once for the maximum nominal range to be used on each electrochemical cell (NO 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 re-accomplished. Additionally, the stability check will be repeated if the cell is replaced.

6.4.1 Stability Check Procedure: The span gas will be injected 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, the flow of the span gas will continue for at least a 15-minute stability check period. No adjustments will be made to the analyzer during the stability check except to maintain constant flow. The stability time will be recorded as the number of minutes elapsed between the start of the gas injection and the start of the 15-minute stability check period. As an alternative, if the 15-minute stability check fails to produce a minimum of a 2.0 percent difference as noted in section 6.4.2 then a 30-minute stability check period may be used to achieve a valid stability check at a maximum difference of 3.0 percent.



6.4.2 Stability Check Calculations: Determine the highest and lowest concentrations recorded during the 15 or 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. 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:

- 7.1 Selection of Sampling Site and Sampling Points:
- 7.1.1 Reciprocating Engines: A sampling site will be selected down stream of any control device, and upstream of any dilution air inlet. A sampling location at a single point near the center of the duct will be used. The sample probe will be positioned at least one stack diameter upstream from the top of the stack.
- 7.1.2 Combustion Turbines: A sampling site from a single point near the center of the duct will be used. Alternatively, if previous test data demonstrate the stack gas concentrations of CO, NO_{X_i} , and O_2 vary significantly across the duct diameter the analyst will select a sampling site and sample points according to the procedures in 40 CFR 60, Appendix A, Method 20.
- 7.1.3 Boilers/Process Heaters: A sampling site will be selected down stream of any control device, and upstream of any dilution air inlet. The sampling location will be at a single point near the center of the duct.
- 7.2 Warm Up Period: The sampling system will be assembled prior to the test allowing 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: A zero and span calibration error check will be conducted before testing each new source. The calibration error check will be conducted near the sampling location just prior to the start of an emissions test. The analyzer will be kept in the same location until the post test calibration error check is conducted.



- 7.3.1 Zero and Span Procedures: The zero and span gases will be injected using the calibration assembly. During this check, no adjustments will be made to the system except those necessary to achieve the correct calibration gas flow rate at the analyzer. Each reading will be allowed to stabilize before the result is recorded. 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, the calibration gas will be disconnected and the system briefly purged with ambient air.
 - 7.3.2 Response Time Determination: The NO and CO response times will be determined 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. The longer of the two times will be noted as the response time.
 - 7.3.3 Failed Pretest Calibration Error Check: If the zero and span calibration error check results are not within the specifications in Section 4, corrective action will be taken and the calibration error check will be repeated until acceptable performance is achieved.
 - 7.4 NO Cell Temperature Monitoring: The initial NO cell temperature will be recorded during the pretest and post test calibration error checks. The temperature will also be recorded regularly (at an interval of one-third and two-thirds of the total test period) during the sample collection period. 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, the sampling will immediately stop and the calibration process will be 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.)
 - 7.5 Sample Collection: The sampling probe will be positioned at the sample point and the sample will be collected at the same flow rate used during the calibration error check. A constant sampling rate will be retained (10 percent of the analyzer flow rate value used in Section 7.3.2) during the entire test. One, 30-minute period shall be considered a test for each source. If the tested unit has separate exhaust stacks for each bank, 15-minutes of test data will be collected on each stack and averaged together for a total of one, thirty-minute sample. 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. No seals will be broken 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, a zero and span calibration error check will be conducted using the procedure in Section 7.3. Conduct the calibration error check at the sampling location. No changes will be made 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, the pretest calibration error check will be repeated before conducting the next test.

7.7 Interference Check: The post test calibration error check results and average emission concentrations for the test will be used to calculate interference responses 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.

7.8 Re-Zero: At least once every three hours, the analyzer will be recalibrated at the zero level.

8. CALIBRATION CORRECTIONS:

8.1 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 limit's 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)



9. EMISSION CALCULATIONS:

9.1 Emission Calculations for Reciprocating Engines and Combustion Turbines: Emissions will be calculated and reported in units of the allowable emission limit as specified in the permit. The allowable may be stated in pounds per hour (lb/hr), pounds per million BTU's (lb/mmbtu), grams per horsepower hour (gm/hp-hr), tons per year (tons/yr) or any applicable combination of the above units. EPA Reference Method 19 shall be used as the basis for calculating the emissions.

9.2 Reciprocating Engines and Combustion Turbines 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. If the reciprocating engine or combustion turbine horsepower can be derived from operating conditions during the portable analyzer test, this derived horsepower may be used to calculate a gram per horsepower hour emission rate.

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 will 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, a default specific fuel consumption of 8,500 - 9,400 Btu/hp-hr will be used. For 2-cycle uncontrolled (non-lean burn) engines, a default specific fuel consumption of 11,000 Btu/hp-hr is the preferred assumption for deriving a horse power. For combustion turbines the sampled emissions will be reported in terms of concentration (ppm by volume, dry basis) corrected to 15 percent O₂. ISO standard day condition corrections will be used to calculate this value.

9.3 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 a calculated horsepower or site-rated horsepower and default specific fuel consumption factors, based on the higher heating value of the fuel, of 8,500 - 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. Alternately, default specific fuel consumption factors may be substituted where manufacturer's specifications obtain greater accuracy. EPA Reference Methods 1-4 may be used to obtain a stack volumetric flow rate and a fuel consumption in MMBtu/hr will be determined from this data.



9.4 Emission Calculations for Heaters/Boilers: For heaters and boilers, pound per million Btu (Ib/MMBtu) emission rates shall be calculated based on EPA Reference Method 19. The pound per million Btu emission rates shall be converted to pound per hour emission rates using heat input per hour (MMBtu/hr). The heat input per hour shall be calculated using the average hourly fuel usage rate during test and the higher heating value of the fuel consumed or the permitted maximum heat input per hour for the boiler or heater. If a fuel meter is used to obtain heat input per hour data, the fuel meter shall be maintained and calibrated according to the manufacturer's recommendations.

10. Reporting of Emission Data.

Calculated emission rates can be submitted to the client in units of, ppm, lbs/MMBtu, gm/bhp-hr, lbs/hr, tons/yr or any other accepted unit. Also included in the report are all calibration results, data chart results and all available unit operating parameters.

APPENDIX E

SCOPE OF WORK FOR PERFORMANCE OPTIMIZATION REVIEW

SCOPE OF WORK PERFORMANCE OPTIMIZATION REVIEW

FOR:

WHITING OIL AND GAS CORPORATION

September 9, 2008

SAGE
ENVIRONMENTAL CONSULTING

"Friendly Service, No Surprises!"

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1.0 <u>INTRODUCTION</u>

On behalf of Whiting Oil and Gas Corporation (Whiting), Sage Environmental Consulting (Sage) will conduct Performance Optimization Review (POR) at two (2) of Whiting's facilities located in the Uinta Basin near Vernal, Utah. Sage will conduct the POR in accordance with and pursuant to the following requirements.

The POR will generally follow and utilize several U.S. Environmental Protection Agency Natural Gas STAR Program practices and technologies with the goal of increasing energy efficiency and enhancing product recovery. The following Scope of Work details the proposed components of the POR.

2.0 SCOPE OF WORK

The Scope of Work will be broken down by proposed facilities included in the POR, POR components, and review details as more specifically described below.

2.1 <u>Facilities</u>

The POR will be conducted at the Flat Rock Compressor Station and Seep Ridge Interconnect Station (herein referred to cumulatively as the "Facilities" or individually as the "Facility").

2.2 POR Scope

The POR is expressly limited to the following activities to be conducted at each of the Facilities:

- <u>Pressure Relief Devices</u> repair or replace components as appropriate to specifically reduce product losses;
- > <u>Production Separators</u> identify optimal pressures and temperatures;
- Dehydrators evaluate for use of electric pumps to reduce natural gas product losses;
- ➤ <u>Internal Combustion Engines</u> evaluate maintenance practices and planned shutdown procedures to minimize product losses from blow down and to evaluate use of starter gas as appropriate;
- Flare and Vent Systems evaluate flare and vent system components and associated operating procedures to reduce the loss of product where possible;
- > Operating Pressures review and optimize where possible; and
- ➤ <u>Component Inspections and Repair</u> perform component inspections using OVA, TVA, or other U.S. Environmental Protection Agency

approved leak detection field equipment and repair or replace leaking components, as appropriate, to enhance product recovery.

2.3 Review Details

Each Facility will be inspected by the same Sage personnel to verify consistency throughout the POR process. A Facility walk through will initially be conducted at each Facility to identify and determine sections of the review applicable to each Facility. The date of the inspection, location, and personnel involved will be documented. Each component of the POR will be detailed in the following sections.

2.3.1 Pressure Relief Devices

Each Facility pressure relief device will be inspected using OVA, TVA, or other approved leak detection field equipment to determine if any pressure relief devices are leaking. For purposes of this POR, a leak shall be defined by an instrument reading of 10,000 parts per million (ppm) or greater for all components with the exception of pressure relief devices in gas/vapor service which shall have a leak definition of 500 ppm or greater. Any identified leaks will be repaired or replaced to minimize product losses. Any replacement or repair that would require a Facility shutdown will be put on a shutdown list that will be signed and documented.

An infrared (IR) camera may be utilized to help screen Facility components for leaks. Using IR camera technology would help locate potential leaks that could then be quantified using OVA, TVA, or other quantifying technology.

A review will be conducted of any company procedures for testing pressure relief devices and documentation of any such reviews. Personnel responsible for any pressure relief device testing will be interviewed. Suggestions for any potential procedural improvements will be documented.

2.3.2 **Production Separators**

Each Facility production separator will be evaluated for optimal operating pressures and temperatures. Pressures and temperatures must be sufficient to allow production into the available gathering pipelines and production facilities.

Pressures and temperatures will be evaluated for optimal operation based on equipment utilized at the Facility. Whiting process engineers familiar with the Facility under review will be interviewed. Again, the intent is to identify optimal pressures and temperatures based on the physical and operational design of the Facility and thereby minimize product losses.

2.3.3 Dehydrators

Each Facility dehydrator will be reviewed to identify opportunities to reduce or minimize product losses associated with the process. The dehydration process for each Facility will be reviewed on-site. Process variables related to product recovery (e.g., glycol recirculation rate, flash tank pressure, condenser temperature, glycol recirculation pump and associated controls) will be evaluated during the on-site Facility review.

2.3.4 Internal Combustion Engines

Maintenance practices and shutdown procedures for each Facility internal combustion engine will be reviewed and evaluated for potential opportunities for reducing product losses resulting from blow down as well as the use of starter gas as appropriate. Written processes or procedures that are available will be reviewed. Any recommendations regarding the above will be based on relevant and applicable constraints identified at each Facility.

2.3.5 Flare and Vent Systems

Facility flare and vent system components will be evaluated for leaks and reviewed for options to reduce venting and loss of product where possible. Leak monitoring may include OVA, TVA or equivalent. Where applicable based on the physical and operational design of the Facility, reasonable alternatives to flares and vent systems will be evaluated.

2.3.6 **Operating Pressures**

Operating pressures within each Facility will be evaluated to determine if there are any opportunities to improve product recovery based on the current physical and operational design of each Facility. This review and evaluation will not include or incorporate re-engineering any of the current systems. This evaluation may include components as described above in Section 2.3.2.

2.3.7 Component Inspections and Repair

Component inspections will be conducted at each of the Facilities. Any identified component leak will be tagged, and appropriate Whiting personnel will be notified of the leaking component for subsequent repair/replacement.

An infrared (IR) camera may be utilized to help screen Facility components for leaks. Using IR camera technology would help locate potential leaks that could then be quantified using OVA, TVA, or other quantifying technology.

3.0 <u>DELIVERABLES</u>

Within forty-five (45) days of completing the POR, Sage will prepare a POR Report of the reviewed items as listed in the Scope of Work and submit the same to Whiting. The POR Report will include the following information:

- ➤ Identify Sage as the contractor conducting the POR;
- ➤ Name, location and original construction date of each of the Facilities at which the POR was completed;
- > General description of the following:

• COMPONENTS:

- o Components by type and service that were inspected;
- o How the components were inspected;
- o Summary and description of any repairs made to the components;
- o Estimate of natural gas conserved as a result of the repairs to the components (to the extent quantifiable); and
- o Repair cost.

Pressure Relief Devices:

- o Pressure relief devices that were inspected;
- o How the pressure relief devices were inspected;
- Summary and description of any repairs made to the pressure relief devices;
- o Estimate of natural gas conserved as a result of the repairs to the pressure relief devices (to the extent quantifiable); and
- o Repair cost.

• PRODUCTION SEPARATORS:

- o Description of the review of production separators;
- o Identification of production separators for which optimal pressures and temperatures were calculated and how they were calculated;
- Comparison of calculated optimal pressures and temperatures to prior production separator conditions;
- o Summary of adjustments to pressures or temperatures that were made;
- o Estimate of the amount of natural gas conserved as a result; and
- o Cost, if significant, to adjust the pressures and temperatures.

• DEHYDRATORS:

- o Description of the evaluation of dehydrators for the use of electric pumps;
- o Summary of projects identified as a result of such review for possible future implementation by Whiting on a voluntary basis;
- o If sufficient data exists to prepare an estimate, an estimate of the amount of natural gas potentially conserved if such projects were implemented; and
- o Cost to implement such projects.

• INTERNAL COMBUSTION ENGINES:

- o Description of the review of shutdown procedures to reduce blow down and the use of starter gas;
- o Summary of any changes that were made based on such review;
- o Estimate of product losses avoided as a result of any change made if the same is reasonably capable of estimation; and
- o Cost to implement such changes.

• FLARE AND VENT SYSTEMS:

- o Description of the review of flare and vent systems;
- o Summary of the repairs made, if any;
- o Estimate of the amount of natural gas conserved as a result of repairs made; and
- o Cost to implement such repairs.

• OPERATING PRESSURES:

- o Description of how operating pressures were evaluated, and where possible, optimized;
- o Estimate of the amount of natural gas conserved as a result of such evaluation; and
- o Estimate of the cost, if non-negligible, to optimize operating pressures.

APPENDIX F

JUNE 27, 2007, SELF-DISCLOSURE LETTER



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June 27, 2007

Mr. Michael T. Risner
Acting Assistant Regional Administrator
EPA Region 8 (MC 8ENF)
1595 Wynkoop Street
Denver, CO 80202-1129

VIA FACSIMILE (303) 312-7202 VIA ELECTRONIC MAIL AND VIA FEDERAL EXPRESS

Re:

Miller Dyer & Co., LLC

Flat Rock Compressor Station

Section 29, Township 14 South, Range 20 East

Uintah County, Utah

Seep Ridge Interconnect Station

Northeast 1/4 of the Northwest 1/4

Section 3, Township 10 South, Range 20 East

Uintah County, Utah

Dear Mr. Risner:

In accordance with the Environmental Protection Agency's ("EPA's") self-disclosure policy, "Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations," 65 Fed. Reg. 19618 (April 11, 2000) (hereinafter "Self-Disclosure Policy"), Miller Dyer & Co., LLC ("Miller Dyer" or "the Company") discloses potential violations of 40 C.F.R. Part 60, Subpart KKK, 40 C.F.R. Part 63, Subparts HH and ZZZZ, and, consequently, of 40 C.F.R. Part 71, at two of its facilities located in Uintah County, Utah. These facilities are known as the "Flat Rock" compressor station and the "Seep Ridge" interconnect station. The Company understands that these facilities are located within the exterior boundaries of Indian Country, and are, therefore, not subject to permitting by the Utah Department of Environmental Quality.

At the outset, please note that Miller Dyer is a small company formed in 1999 to provide consulting services to the oil and gas industry. Due to increasing demand for operational services, Miller Dyer began to operate certain Uinta Basin oil and gas properties in 2003. The Company has a staff of six, of which two are technical professionals. The Company does not have an environmental staff or a legal department. During the period of



its compliance review, the Company professionals have been stretched with numerous and complex duties, and, as a result, environmental compliance has fallen behind. It is the Company's sincere hope that its current efforts and this letter will promptly bring the Company's facilities into full compliance.

I. Flat Rock Compressor Station

The Flat Rock compressor station has a compressor engine, a glycol dehydration unit, and two "slop tanks," each having 400-barrel capacity. Miller Dyer has installed control equipment, consisting of a condenser ("BTEX Unit") and an enclosed flare, on the dehydrator, to limit emissions of HAPs. Also, Miller Dyer has installed a catalytic converter designed for MACT compliance on the compressor engine.

With the current controls, the facility's current maximum projected annual emissions of volatile organic compounds (VOCs) are 7.5 tons per year. Prior to the installation of the process condenser, the facility may have had potential VOC emissions above the Title V applicability threshold.

With the current controls, the facility's current maximum projected annual hazardous air pollutant (HAP) emissions are 2.77 tons per year. The potential emissions of hazardous air pollutants exceed the major source thresholds in Section 112 of the Clean Air Act, and the facility may thus be subject to 40 C.F.R. Part 63, Subpart HH and may be required to obtain a Title V operating permit.

The Flat Rock compressor station was constructed in late 2004 and became operational in 2005. Miller Dyer acquired the equipment for Flat Rock from a similar permitted facility located in Utah. The seller of the equipment provided documentation of a determination by the Utah Department of Environmental Quality that the operation of the equipment had been modeled and its emissions were below applicability thresholds for major new source construction permitting and for operating permits under Title V. A consultant for Miller Dyer advised Miller Dyer that there would be no applicable minor source air permit program. Dehydrator No. 1 (14 MM scfd rating) began to operate in February 2005. Apparently the field gas composition at Flat Rock is different from the composition at the other facility, resulting in higher potential emissions at Flat Rock.

In November 2006, the Company replaced Dehydrator No. 1 with a dehydration unit that would provide more capacity ("Dehydrator No. 2," rated at 30 MM scfd; however, based on pipeline capacity, the maximum throughput of Dehy No. 2 is 26 MM scfd). The Company retained a new consulting company, Buys and Associates ("Buys"), in the latter half of 2006. Buys prepared emission estimates in the fall of 2006, and based on these estimates, Miller Dyer requested Buys to undertake a compliance review, including emission estimates, for Dehydrator No. 1. Although the compliance review has not yet been completed, Miller Dyer is reporting potential violations at the Flat Rock compressor station pursuant to the EPA Self-Disclosure Policy.



The following table sets forth the PTE and actual emissions for each configuration of the Flat Rock compressor station:

		(Pr)	
	Type of Emissions Calculation	voc	HAPs
	PTE (tpy)	151.3	123.92
Dehydrator # 2 Dehydrator #1 – installed Feb. 2005	Actual emissions from 11/3/2006 – 6/19-2007 (tpy)	51.2	40.20
Denydrator # 2	Projected maximum annual emission rates, current configuration (with controls)(tpy)	VOC 151.3	2.77
	PTE (tpy)	164.9	120.28
(without controls)	Actual (2/22/05 – 2/21/06) (tpy)	137.3	92.96

(Please see Attachments 1 through 5 for complete emission summaries.)

The Flat Rock facility may have been subject to Title V/Part 71 as of February, 2005, and potentially should have submitted a Part 71 permit application to EPA Region 8 in February, 2006. The Company is in the process of preparing a Part 71 permit application.

Additionally, Miller Dyer has considered well site FR 13-29, its largest well site in the Flat Rock area, for aggregation impacts on the Flat Rock compressor station. We have determined that pursuant to the EPA's aggregation policy for the oil and gas industry, the well site is not in "close proximity" to the Flat Rock compressor station. The well site is located across a road from the compressor station at a distance of approximately fifty yards.

Miller Dyer will keep EPA informed about its progress in meeting additional applicable requirements.

II. Seep Ridge Interconnect Station

The Seep Ridge interconnect station has a generator engine, tanks, and a hydrocarbon dew-point conditioning skid. In addition, there are emissions from truck loading and unloading. When the facility was constructed, it had a generator with limited operating capacity; the generator's potential emissions were below the major source threshold. The original generator was replaced on March 17, 2007, and the facility's potential NO_x emissions are now 123.69 tons

Memorandum, U.S. EPA, Office of Air and Radiation, "Source Determinations for Oil and Gas Industries," January 12, 2007.

per year. (Please see Attachment 6 for complete emission summary.) It is the Company's understanding that a Title V operating permit application must be submitted within one year from the time when the facility became subject to Title V. Miller Dyer plans to submit a Title V operating permit application for the facility before March 16, 2008. The facility's potential emissions of HAPs are below the applicable major source thresholds.

The conditioning skid start-up was in April 2006. The throughput capacity of the conditioning skid at the Seep Ridge interconnect station exceeds 10 million standard cubic feet per day. The facility may, therefore, be subject to 40 C.F.R. Part 60, Subpart KKK, and the new source performance standards for natural gas processing plants. Miller Dyer has implemented a leak detection and repair program at the Seep Ridge facility and is currently evaluating the program to determine whether it satisfies the requirements of Subpart KKK.

III. EPA Self-Disclosure Policy

Miller Dyer believes that there may be potential Clean Air Act violations at its Flat Rock and Seep Ridge facilities and requests that any potential violations be addressed pursuant to EPA's Self-Disclosure Policy. The Self-Disclosure Policy establishes nine conditions for its applicability.

1. Systematic Discovery of the Violation Through an Environmental Audit or a Compliance Management System: The Self-Disclosure Policy states that the discovery "must reflect the regulated entity's due diligence in preventing, detecting, and correcting violations." 65 Fed. Reg. at 19625.

Response: The discovery of these potential violations reflects the Company's diligent attitude toward environmental compliance. Miller Dyer pursued its questions regarding the potential applicability of Clean Air Act requirements despite having received assurances from a previous consultant that there were no applicable requirements. Although the discovery of these potential violations did not result from a formal self-auditing program, Miller Dyer's practice is to continually review the environmental compliance status of its two facilities. The occurrence of this self-disclosure shows that Miller Dyer's practice of continual compliance status review is effective: if Miller Dyer had not continued to review its compliance status, the Company would not have identified these potential violations. Miller Dyer is willing to discuss with EPA possible avenues for improving its self-assessments.

2. Voluntary Discovery: The violation must have been discovered through a process other than "a legally mandated monitoring or sampling requirement prescribed by statute, regulation, permit, judicial or administrative order, or consent agreement." *Id.*

<u>Response</u>: The potential violations were discovered through the voluntary efforts of Miller Dyer. Please see the response to No. 1 above.

3. **Prompt Disclosure**: The company must fully disclose the specific violation in writing to EPA within 21 days after discovering "that the violation has, or may have, occurred." This time period begins when "any officer, director, employee or agent of the facility has an objectively reasonable basis for believing that a violation has, or may have, occurred." 65 Fed. Reg. at 19626.

Response: Miller Dyer is a small energy operating company with a staff of six, of which two are technical professionals. It began gathering and reviewing information relevant to the compliance status of the Flat Rock compressor station and the Seep Ridge interconnect station in September 2006, when Buys and Associates completed an emissions inventory for the facilities. As the Company reviewed the data generated by Buys, it had to retrieve and compare the 2004 permit review information, and it directed Buys to review the compliance status of Dehydrator No. 1 at Flat Rock.

The Company retained and discussed these issues with counsel for the first time on June 21, 2007. This letter is submitted within one week after retaining counsel on this issue. The Company does not seek to prove that this letter is submitted within 21 days of the time when management may have had an objectively reasonable basis for believing that a violation may have occurred. Rather, Miller Dyer requests that the Agency use its discretion to consider this self-disclosure, even though it may be submitted outside the 21-day period.

4. Discovery and Disclosure Independent of Government or Third-Party Plaintiff: The company must discover and disclose the violation before EPA or another government agency would have been likely to become aware of it through inspection or from information received from a third party. *Id*.

Response: Based upon the circumstances described in this letter, Miller Dyer became aware of the potential violations before EPA or any other governmental entity became aware of them. Also, Miller Dyer has become aware of the potential violations before any third parties have become involved.

5. Correction and Remediation: The company must correct the violation within 60 calendar days from the date of the discovery; certify in writing that the violation has been corrected; and take appropriate measures as determined by EPA to remedy any harm to the environment or human health. *Id.*

Response: Miller Dyer is working to identify the steps that need to be taken to respond to the potential noncompliance. The Company has installed control equipment consisting of a condenser ("BTEX Buster") and an enclosed flare device on the dehydrator at the Flat Rock compressor station. Also at the Flat Rock compressor station, Miller Dyer has installed a catalytic converter that is designed to be MACT-compliant on the compressor engine. In addition, the Company has implemented a leak detection and repair program at the Seep Ridge interconnect station. The Company is working to complete and submit a Title V permit application for the Flat Rock facility as quickly as possible.

6. **Prevent Recurrence**: The company must agree in writing to take steps to prevent a recurrence of the violation. *Id.*

Response: As noted above, Miller Dyer is in the process of bringing the facilities into compliance with applicable requirements. The Company intends to comply with both the letter and the spirit of applicable environmental laws and is willing to discuss with EPA suggestions that the Agency may have to improve the Company's environmental review process. Miller Dyer agrees to work to prevent a recurrence of the potential violations at issue in this letter and hopes to improve its operations to maintain a high standard of environmental performance.

7. **No Repeat Violations:** The violation at issue may not have occurred within the previous three years at the same facility, and may not have occurred within the previous five years as part of a pattern at multiple facilities owned or operated by the same company. *Id*.

<u>Response</u>: The potential violations identified in this letter are not repeat violations, nor are they part of a pattern at multiple facilities owned or operated by Miller Dyer.

8. **Other Violations Excluded:** The self-disclosure policy does not apply where the violation has resulted in serious actual harm or imminent and substantial endangerment to human health or the environment. Also, violations of the terms of a consent agreement or judicial or administrative order are not eligible.

<u>Response</u>: Miller Dyer does not believe that these potential violations have posed a substantial harm to the public health or to the environment. Both the Flat Rock and the Seep Ridge facilities are located in remote areas, so any excess emissions from these facilities would be less likely to affect human health than would facilities located in densely populated areas. Finally, these potential violations do not violate the terms of a consent agreement or judicial or administrative order.

9. Cooperation: The company must cooperate as requested by EPA and must provide EPA with all appropriate information to determine whether the self-disclosure policy applies.

Response: Miller Dyer will provide EPA with all appropriate information necessary to evaluate these issues. The Company is committed to ensuring that it is in compliance with applicable environmental requirements and will work with EPA to resolve its potential noncompliance as efficiently as possible.

Miller Dyer is working to address the potential noncompliance at its facilities as quickly as possible. The Company will provide EPA with additional information concerning these facilities upon request. Miller Dyer would like to resolve these issues and will contact your staff



to discuss the possibility of meeting in person. Should you have any questions about this matter, please contact John Dyer at 303-292-0949, ext. 103, or the undersigned at 504-556-4130.

Very truly yours,

Robert E. Holden Counsel for Miller Dyer & Co. LLC

REH:ddt Enclosure

cc: Cynthia Reynolds, Acting Director, Technical Enforcement

APPENDIX G

AUGUST 20, 2007, SELF-DISCLOSURE LETTER



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August 20, 2007

Mr. Michael T. Risner Acting Assistant Regional Administrator EPA Region 8 (MC 8ENF) 1595 Wynkoop Street Denver, CO 80202-1129

VIA FACSIMILE (303) 312-7202 VIA ELECTRONIC MAIL AND VIA FEDERAL EXPRESS

Re:

Miller Dyer & Co., LLC

Comet Pipeline Compressor Station

Dear Mr. Risner:

In accordance with the Environmental Protection Agency's ("EPA's") self-disclosure policy, "Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations," 65 Fed. Reg. 19618 (April 11, 2000) (hereinafter "Self-Disclosure Policy"), Miller Dyer & Co., LLC ("Miller Dyer" or "the Company") discloses potential violations of 40 C.F.R. Part 60, Subpart KKK, 40 C.F.R. Part 63, Subparts HH and ZZZZ, and, consequently, of 40 C.F.R. Part 71, at the Comet Pipeline Compressor Station ("the Facility"), located in Uintah County, Utah. Miller Dyer first became the operator of the Facility in September 2003. It operated the Facility until February 22, 2005, when the Facility was shut down and eventually dismantled. Miller Dyer understands that the Facility was located within the exterior boundaries of Indian Country, and, therefore, was not subject to permitting by the Utah Department of Environmental Quality.

At the outset, please note that Miller Dyer is a small company formed in 1999 to provide consulting services to the oil and gas industry. Due to increasing demand for operational services, Miller Dyer began to operate certain Uinta Basin oil and gas properties in September 2003. The Company has a staff of six, of which two are technical professionals. The Company does not have an environmental staff or a legal department. It is the Company's sincere hope that its current efforts and this letter will promptly bring the Company's facilities into full compliance.



I. Background

By way of background, Miller Dyer was retained by investors in the hydrocarbon development of the "Flat Rock" lease area in the Uinta Basin to assume the role of operator in September 2003. The Comet Pipeline Compressor Station was operating at that time, in September 2003, in the configuration that will be described below. Suffice it to say that the prior operator provided little cooperation in the transition, and indeed initiated lawsuits regarding the mineral interests that have only recently been resolved. Miller Dyer operated the Facility under the belief that no air permit or other control requirements were applicable to the Facility. Miller Dyer operated the Facility until February 22, 2005, when the Facility was shut in.

Miller Dyer shut in and subsequently dismantled the Comet Pipeline Compressor Stations because it had initiated operations at the Flat Rock Compressor Station, located approximately 5 miles away. The Flat Rock Compressor Station is described in Miller Dyer's self-disclosure letter to EPA dated June 27, 2007. As a result of Miller Dyer's self-disclosure evaluation of the Flat Rock Compressor Station, Miller Dyer collected information on the equipment configuration at the Comet Pipeline Compressor Station and requested Buys & Associates to evaluate the potential emissions of the Comet Pipeline Compressor Station. Buys & Associates provided Miller Dyer with its potential to emit calculations on July 31, 2007, and this self-disclosure letter is submitted to EPA within 21-days thereof.

II. Comet Pipeline Compressor Station

At this facility, Miller Dyer had a compressor and dehydrator. The compressor at this site was a Caterpillar 399 TALCR engine on an Ariel JGR-4 frame, with a sea-level 830 horsepower rating. This compressor took the gas from a suction pressure of 250 psi to a discharge pressure of approximately 900 psi depending on Questar's Mainline 40 line pressure. Once the gas left the compressor, the entire stream was run through a Natco 375 MBTU/hr reconcentrator with a 30" 8-tray bubble-cap tower. This reconcentrator had dual 21015 glycol circulation pumps and again had no controls.

The Facility also consisted of a fuel-gas scrubber and two 100-barrel slop oil tanks. The tanks held liquids caught in the scrubber or in the compressor. The potential emissions from these tanks, including conservatively estimated flash emissions, are 1.51 tons per year of VOCs, and 0.07 tons per year of aggregate HAPs from each tank. See Attachment 1.

The maximum feed to the dehydrator was 7 MM scfd based on the productive capacity of the wells feeding the gathering system. Attached is a graph and spreadsheet (Attachment 2) showing Miller Dyer's total production and compressor station throughput for this period. As shown, the maximum total daily production was 6.991 MM scfd on January 7, 2005. The maximum compressor throughput is estimated at approximately 7 MM scfd based on an inlet pressur of 250 psi and a discharge pressure of 900 psi.

The PTE of the compressor engine was calculated based on the horsepower rating of the Caterpillar 399 engine, assuming 8760 hours per year of operation.

As shown in the PTE calculations shown in Attachment 3, the Facility had a PTE of 127.2 tons per year of VOCs and 85.9 tons per year of hazardous air pollutants. It may therefore have exceeded major source thresholds under the Clean Air Act and consequently may have been subject to the Title V air permitting requirements and to 40 C.F.R. Part 63, Subparts HH and ZZZZ.

III. EPA Self-Disclosure Policy

Miller Dyer believes that there may be potential Clean Air Act violations at its Comet Pipeline Compressor Station and requests that any potential violations be addressed pursuant to EPA's Self-Disclosure Policy. The Self-Disclosure Policy establishes nine conditions for its applicability.

1. Systematic Discovery of the Violation Through an Environmental Audit or a Compliance Management System: The Self-Disclosure Policy states that the discovery "must reflect the regulated entity's due diligence in preventing, detecting, and correcting violations." 65 Fed. Reg. at 19625.

Response: The discovery of these potential violations reflects the Company's diligent attitude toward environmental compliance. Miller Dyer initiated its review of the now-dismantled Facility, which has not been in operation for more than two years, for the sole purpose of reviewing its environmental compliance status. It retained Buys and Associates to audit the compliance status of this Facility.

2. Voluntary Discovery: The violation must have been discovered through a process other than "a legally mandated monitoring or sampling requirement prescribed by statute, regulation, permit, judicial or administrative order, or consent agreement." *Id.*

Response: The potential violations were discovered through the voluntary efforts of Miller Dyer. Please see the response to No. 1 above.

3. **Prompt Disclosure**: The company must fully disclose the specific violation in writing to EPA within 21 days after discovering "that the violation has, or may have, occurred." This time period begins when "any officer, director, employee or agent of the facility has an objectively reasonable basis for believing that a violation has, or may have, occurred." 65 Fed. Reg. at 19626.

Response: Miller Dyer received Buys and Associates' emission estimates for this Facility on July 31, 2007, and this report is being submitted within 21 days of the receipt of this information..

4. Discovery and Disclosure Independent of Government or Third-Party Plaintiff: The company must discover and disclose the violation before EPA or

another government agency would have been likely to become aware of it through inspection or from information received from a third party. *Id*.

Response: Based upon the circumstances described in this letter, Miller Dyer became aware of the potential violations before EPA or any other governmental entity became aware of them. Also, Miller Dyer has become aware of the potential violations before any third parties have become involved.

5. Correction and Remediation: The company must correct the violation within 60 calendar days from the date of the discovery; certify in writing that the violation has been corrected; and take appropriate measures as determined by EPA to remedy any harm to the environment or human health. *Id*.

Response: The Facility is no longer in operation or capable of being operated.

6. **Prevent Recurrence**: The company must agree in writing to take steps to prevent a recurrence of the violation. *Id.*

Response: Miller Dyer is committed to preventing recurrence of such incidents.

7. **No Repeat Violations**: The violation at issue may not have occurred within the previous three years at the same facility, and may not have occurred within the previous five years as part of a pattern at multiple facilities owned or operated by the same company. *Id*.

Response: The potential violations identified in this letter are not repeat violations, nor are they part of a pattern at multiple facilities owned or operated by Miller Dyer.

8. Other Violations Excluded: The self-disclosure policy does not apply where the violation has resulted in serious actual harm or imminent and substantial endangerment to human health or the environment. Also, violations of the terms of a consent agreement or judicial or administrative order are not eligible.

Response: Miller Dyer does not believe that these potential violations have posed a substantial threat of harm to the public health or to the environment. The Facility was located in a remote area, so any excess emissions would be less likely to affect human health than would facilities located in densely populated areas. Finally, these potential violations did not violate the terms of a consent agreement or judicial or administrative order.

9. **Cooperation**: The company must cooperate as requested by EPA and must provide EPA with all appropriate information to determine whether the self-disclosure policy applies.

Response: Miller Dyer will provide EPA with all appropriate information necessary to evaluate these issues. The Company is committed to ensuring that it is in compliance with



applicable environmental requirements and will work with EPA to resolve its potential noncompliance as efficiently as possible. The Company will provide EPA with additional information concerning these facilities upon request. Miller Dyer would like to resolve these issues and will contact your staff to discuss the possibility of meeting in person. Should you have any questions about this matter, please contact John Dyer at 303-292-0949, ext. 103, or the undersigned at 504-556-4130.

Very truly yours,

Robert E. Holden Counsel for Miller Dyer & Co. LLC

REH:ddt Enclosure

cc: Cynthia Reynolds, Acting Director, Technical Enforcement Jim Eppers, U.S. EPA Region 8