



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

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Ref: 8P-AR

Mike Weaver
Midstream Operations Manager
Anadarko Uintah Midstream, LLC
P.O. Box 173779
Denver, Colorado 80202-3779

APR 04 2017

Re: Anadarko Uintah Midstream, LLC, Cottonwood Wash Compressor Station
Permit #SMNSR-UO-000007-2012.001
Final Synthetic Minor New Source Review Permit and Response to Comments

Dear Mr. Weaver:

The U.S. Environmental Protection Agency Region 8 has completed its review of Anadarko Uintah Midstream, LLC's application request to obtain a synthetic minor source permit pursuant to the Tribal Minor New Source Review (MNSR) Permit Program at 40 CFR part 49 for the Cottonwood Wash Compressor Station located on Indian country lands within the Uintah and Ouray Indian Reservation, in Uintah County, Utah. This permit was requested in response to the requirement at 40 CFR 49.153(a)(3)(v) for existing sources that obtained synthetic minor status through an enforceable mechanism other than an MNSR permit.

The Cottonwood Wash Compressor Station is subject to a March 27, 2008, Federal Consent Decree between the United States of America (Plaintiff), and the State of Colorado, the Rocky Mountain Clean Air Action and the Natural Resources Defense Council (Plaintiff-Intervenors), and Kerr-McGee Corporation (Civil Action No. 07-CV-01034-EWN-KMT). Anadarko requested the MNSR permit to incorporate enforceable requirements of the Consent Decree applicable to volatile organic compound (VOC) emissions from a tri-ethylene glycol (TEG) dehydration system, produced water and condensate storage tanks and pneumatic controllers operating at the Cottonwood Wash Compressor Station, such that the Consent Decree may be terminated. Additionally, Anadarko requested enforceable requirements for carbon monoxide emissions control through the installation and operation of a catalytic control system on each of nine (9) natural gas-fired 4-stroke lean-burn (4SLB) reciprocating internal combustion engines used for compliance with applicable requirements for hazardous air pollutants at 40 CFR part 63, subpart ZZZZ.

Based on the information submitted in Anadarko's permit application, the EPA hereby issues the enclosed final synthetic MNSR permit for the Cottonwood Wash Compressor Station. Please review each condition carefully and note any restrictions placed on this source.

A 30-day public comment period was held from December 9, 2016 to January 9, 2017. The EPA received comments from Anadarko on January 9, 2017. No other comments were received during the public comment period. The EPA's responses to the public comments are enclosed. The EPA made several revisions to the permit based on Anadarko's comments. The final permit will be effective on May 4, 2017.

Pursuant to 40 CFR 49.159, within 30 days after the final permit decision has been issued, any person who commented on the specific terms and conditions of the draft permit may petition the Environmental Appeals Board to review any term or condition of the permit. Any person who failed to comment on the specific terms and conditions of this permit may petition for administrative review only to the extent that the changes from the draft to the final permit or other new grounds were not reasonably ascertainable during the public comment period. The 30-day period within which a person may request review begins with this dated notice of the final permit decision. If an administrative review of the final permit is requested, the specific terms and conditions of the permit that are the subject of the request for review must be stayed.

If you have any questions concerning the enclosed final permit, please contact Claudia Smith of my staff at (303) 312-6520.

Sincerely,



Monica Morales
Acting Director
Air Program

Enclosures (2)

cc: Bruce Pargeets, Acting Director, Energy, Minerals and Air, Ute Indian Tribe
Minnie Grant, Air Coordinator, Energy, Minerals, and Air, Ute Indian Tribe
Honorable Shaun Chappoose, Chairman, Ute Indian Business Committee (w/o enclosures)
Edred Secakuku, Vice Chairman, Ute Indian Business Committee (w/o enclosures)
Reannin Tapoof, Executive Assistant, Ute Indian Business Committee (w/o enclosures)
Chad Schlichtemeier, HSE Manager, Anadarko Uintah Midstream, LLC

EPA Responses to Comments from Anadarko Uintah Midstream, LLC, on the Proposed Synthetic MNSR Permit for the Cottonwood Wash Compressor Station Pursuant to the MNSR Permit Program at 40 CFR Part 49

I General Comments Regarding Permit Objectives

1. “Establish enforceable requirements for installation and operation of a catalytic control system on natural gas-fired 4-stroke lean-burn (4SLB) reciprocating internal combustion engines (RICE) to recognize the facility as a synthetic minor for carbon monoxide (CO) emissions.
 - The Cottonwood Compressor Station is a true minor for all other pollutants. Therefore, APC is only requesting CO limits to be established for the compressor engines.
 - All engines at this facility are required to comply with 40 CFR Part 63 ZZZZ (ZZZZ). It is APC’s understanding that EPA is including the ZZZZ language for temperature and pressure drop monitoring as conditions of the permit due to synthetic minor for CO with no intent to change the requirements of ZZZZ. Adding conditions that are redundant are unnecessary and unless word-for-word can lead to different interpretations. APC has reviewed the conditions for consistency but given the format it is difficult in all cases to determine whether the paraphrasing has the same meaning as the CFR citation. One example of the consistency issue is the proposed conditions require monitoring every 30 days (see conditions 5(c) and (d)) where the rule requires monitoring monthly. On the surface this seems pretty benign but in application could result 2 readings required per month (e.g. months greater than 30 days) or no readings (i.e. February 28 or 29 days). Also, if the rule is modified having conditions in the permit could result in having to comply with 2 sets of regulations until the permit is modified. APC’s position is the discussion on continuous compliance belongs in the statement of basis. Adding conditions to a permit that a source is already required to comply with does not ensure a higher level of compliance. If EPA determines the requirements of ZZZZ need to be part of this permit, APC suggests one of the following:
 - That the conditions are removed and the rule is attached as an appendix to the permit or
 - Revise the conditions to reference the applicable sections of ZZZZ. APC has added proposed permit condition language in Section II. If conditions remain in the final permit, APC request confirmation that the intent of the ZZZZ conditions is to mirror the requirements of ZZZZ and compliance with ZZZZ will constitute compliance with the ZZZZ conditions in the permit.”

EPA Response: We have revised the requirements for the 4SLB Compressor Engines, generally as requested, to reference compliance according to specific sections of the NESHAP for RICE at 40 CFR part 63, subpart ZZZZ, with some differences in verbiage/style that align better with standard permit language guidelines and which we believe do not contradict the intent of the applicant’s comments. Because these engines are already subject to and complying with subpart ZZZZ, it was always the EPA’s intent to develop enforceable permit terms for control of engine CO emissions that are consistent with the subpart ZZZZ requirements for reducing HAP emissions, which are also the means

by which the applicant is reducing CO emissions, specifically through the use of oxidation catalyst controls.

2. “Incorporate the requirements of the March 27, 2008 Consent Decree (CD) with the intent of termination.
 - APC is requesting the requirements for the low-emission dehydrator, water storage tanks/flare and pneumatic controllers be incorporated into this permit.
 - This facility is a true minor for VOC emissions and, therefore, APC is not requesting throughput, emissions, monitoring and/or recordkeeping requirements not listed in the CD unless specifically requested by APC.
 - This is one of several permits that need to be issued before the CD can be terminated. APC requests that the requirements for the low-emissions dehydrator, water storage tanks and pneumatic controllers proposed in this permit are effective upon termination of the CD.”

EPA Response: We have revised the requirements for the Low-Emission Dehydrator, the natural gas condensate and produced water storage tanks and the pneumatic controllers, generally as requested, with some differences in verbiage/style that align better with standard permit language guidelines and which we believe do not contradict the intent of the applicant’s comments. It was always the EPA’s intent to develop permit terms that memorialized the conditions of the Consent Decree that the Permittee desired to remain enforceable after its eventual termination. In some cases, language from a Consent Decree does not necessarily comport with standard permit language style and requirements, which can make drafting permit conditions somewhat challenging.

II Comments Regarding Specific Permit Conditions

3. “C. Requirements for the Low-Emission Dehydrator

1. Construction and Operational Limits

(a) The Permittee shall install, operate, and maintain no more than one (1) TEG Low-Emission Dehydrator meeting the following specifications:

~~(i) Limited to a maximum throughput of 85 million standard cubic feet per day (MMscfd) of natural gas;~~

APC Comment: Low-Emission Dehydrator emissions are not a function of throughput but design. Emissions are less than 1 tpy VOC for any size. Not requesting synthetic minor for VOC and throughput limitation is not a requirement of CD, therefore, request to be removed.

~~(ii) Certified as a "Low Emission Dehydrator" that:~~

~~(A) Incorporates an integral vapor recovery function such that the dehydrator cannot operate independent of the vapor recovery function;~~

~~(B) Either returns the captured vapors to the inlet of the facility where the dehydrator is located or routes the captured vapors to the facility's fuel gas supply header; and~~

~~(C) Meets the control and operational requirements specified in this permit.~~

~~(b) Only the dehydration unit that is operated and controlled as specified in this permit is approved for installation and operation under this permit.~~

APC Comment: Language in 1 (a)(ii) is slightly different than the CD language. For consistency going forward, APC requests the language below from the CD. Attached is the May 26, 2006 letter documenting the existing low-emission dehydrator meets the requirement of 1 (a)(ii)

(ii) Low-Emission Dehydrator shall meet the specifications set forth in Appendix C (attached) and shall mean a dehydration unit that:

- Incorporates an integral vapor recovery function such that the dehydrator cannot operate independent of the vapor recovery function;
- Either returns the captured vapors to the inlet of the facility where such dehydrator is located or routes the captured vapors to that facility's fuel gas supply header; and
- Has a PTE less than 1.0 TPY of VOCs, inclusive of VOC emissions from the reboiler burner.

~~2. Emission Limits:~~

~~(a) Emissions from the Low Emission Dehydrator shall not exceed 1.0 tons of VOC in any consecutive 12-month period.~~

~~(b) Emission limits shall apply at all times, unless otherwise specified in this permit.~~

~~3. Emissions Calculation Requirements~~

~~(a) VOC emissions for the Low Emission Dehydrator shall be calculated, in tons, and recorded at the end of each month, beginning with the first calendar month that this permit is effective.~~

~~(b) Prior to 12 full months of VOC emissions calculations, the Permittee must, within 7 calendar days of the end of each month, add the emissions for that month to the calculated emissions for all previous months since production commenced and record the total. Thereafter, the Permittee must, within seven 7 calendar days of the end of each month, add the emissions for that month to the calculated emissions for the preceding 11 months and record a new 12 month total.~~

~~(c) VOC emissions shall be calculated, in tons, using a generally accepted simulation model or software (examples include ProMax and GRI GLYCalcTM Version 4.0 or higher). Inputs to the model shall be representative of actual average monthly operating conditions of the glycol dehydration unit and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled, "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI 95/0368.1).~~

APC Comment: By meeting the requirements of 1(a)(ii) from the CD, the emissions are less than 1 tpy VOC by design. Calculation of emissions is not required by CD and therefore, APC requests 2. Emission Limits and 3. Emission Calculation Requirements be removed.

4. Control and Operational Requirements

~~(a) The Permittee shall route all non-condensable emissions from the Low Emission Dehydrator process vent and flash tank through a closed vent system to a vapor recovery unit (VRU) with reciprocating or scroll compressors.~~

~~(b) The Low Emission Dehydrator and VRU system shall have at least three (3) levels of protection to prevent VOC emissions from occurring:~~

~~(i) Physical electrical hard wiring between the VRU compressor(s) and the TEG circulation pump employed to ensure that if the VRU ceases to operate, the TEG 6 pump also shuts down, thereby halting the circulation of TEG through the wet gas and preventing emissions associated with the regeneration of the TEG;~~

~~(ii) A second level of protection (redundancy) is incorporated into a Programmable Logic Controller that uses instrumentation to shut down the Low Emission Dehydrator in the event the VRU compressor ceases to operate; and~~

~~(iii) A third level of protection pumps the non-condensable gases from the Low Emission Dehydrator exclusively to the station inlet or fuel system for use as fuel and ensures it is not used for blanket gas in storage tanks or otherwise vented to the atmosphere.~~

APC Comment: Appendix C of the CD details design requirements of the Low-Emission Dehydrator. APC has demonstrated that dehydrator meets these requirements. APC is requesting Appendix C be included as part of the permit to ensure the design requirements remain enforceable. APC requests 4. Control and Operational Requirements be removed.

5. Monitoring Requirements

~~(a) The Permittee shall inspect the Low Emission Dehydrator and VRU on a daily basis to ensure proper operation according to the manufacturer's maintenance recommendations.~~

~~(b) The Permittee shall monitor the closed vent system for leaks of hydrocarbon emissions from all vent lines, connections, fittings, valves, relief valves, or any other appurtenance employed to contain, collect, and transport gases, vapors, and fumes to the VRU as follows:~~

~~(i) Visit the facility on a quarterly basis to inspect the closed vent system for defects that could result in air emissions and document each inspection. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; or broken or missing caps or other closure devices. If a quarterly visit is not feasible due to sudden, infrequent, and unavoidable events (e.g. weather, road conditions), every effort shall be made to visit the facility as close to quarterly as possible;~~

- (ii) The inspections shall be based on audio, visual, and olfactory procedures; and
- (iii) Any leaks detected in the closed-vent system shall be addressed immediately unless the repair requires resources not currently available. If the resources are not available, the leak shall be repaired no later than ~~15~~ 30 days after initial detection of the leak.

APC Comment: None of the requirements of 5(a) or (b) are included in the CD. APC does agree to the inclusion of (b)(i)(iii) with the exception that the 15 day repair is changed to 30 days to align with 0000a. Condition 5(a) requires daily inspections. This facility is not a manned station and is remotely located. Therefore, APC requests 5(a) be removed.

~~(c) The Permittee shall install, operate, and maintain a meter that continuously measures the natural gas flowrate to the Low Emission Dehydrator with an accuracy of plus or minus 2% or better. The meter shall be inspected on a monthly basis to ensure proper operation per the manufacturer's specifications.~~

~~(d) The Permittee shall convert monthly natural gas flowrate to a daily average by dividing the monthly flowrate by the number of days in the month that the Low Emission Dehydrator processed natural gas. The Permittee shall document the actual monthly average natural gas flowrate.~~

APC Comment: Conditions 5(c) and (d) are associated with verifying throughput for the dehydrator. See APC Comment for 1(a)(i). APC requests 5(c) and (d) be removed.

6. Recordkeeping Requirements

~~(a) The Permittee shall document compliance with the VOC omission limits in this permit by keeping the following records:~~

~~(i) All manufacturer and/or vendor specifications for the Low Emission Dehydrator, VRU, closed vent system, and any monitoring equipment, adequate to demonstrate its compliance with the requirements of this permit;~~

~~(ii) All extended wet gas analyses;~~

~~(iii) The actual monthly average natural gas flowrate; and~~

~~(iv) The total monthly and consecutive 12-month VOC emissions calculations for the Low Emission Dehydrator.~~

APC Comment: Emissions from the dehydrator are < 1 tpy VOC by design. See APC Comment for Conditions 2. APC requests Condition 6 be removed.

APC Comment: APC is moving towards termination of the Kerr McGee March 27, 2008 Consent Decree. To avoid having two documents to comply with, APC requests the following condition be added making the conditions under C. Requirements for the Low-Emission Dehydrator effective upon termination of the CD.

Requirements under Condition C. Requirements for the Low-Emission Dehydrator shall be effective upon termination of the Kerr McGee March 27, 2008 Consent Decree”

EPA Response: We have revised Section C. Requirements for the Low-Emission Dehydrator, generally as requested, with some differences in verbiage/style that align better with standard permit language guidelines and which we believe do not contradict the intent of the applicant’s comments. As stated earlier in this Response to Comments, it was always the EPA’s intent to develop permit terms that memorialized the conditions of the Consent Decree that the Permittee desired to remain enforceable after its eventual termination. In some cases, language from a Consent Decree does not necessarily comport with standard permit language style and requirements, which can make drafting permit conditions somewhat challenging. After considering that the low-emission dehydration unit’s design is what limits its emissions, we determined the requested revisions, with inclusion of the design requirements of the Consent Decree as an appendix, are sufficient to provide ongoing enforceability for the unit’s low VOC emissions. We also agree that it is prudent to make requirements in the MNSR permit that were drafted from the Consent Decree effective only upon termination of the Consent Decree to avoid the applicant having two documents to comply with at a given time that contain duplicative requirements.

4. **“D. Requirements for 4SLB Compressor Engines**

1. Construction and Operational Requirements

(a) The Permittee shall install and operate emission controls as specified in this permit on nine (9) existing engines used for ~~natural~~ gas compression, all meeting the following specifications:

APC Comment: Several places in the proposed permit there is reference to natural gas and pipeline quality. This facility compresses unprocessed gas more commonly referred to as wet gas. Gas from this facility is sent to the Chipeta Gas Plant for processing. There is no equipment present at this facility to meet a specific fuel gas requirement. Therefore, APC requests all references to natural gas and pipeline quality be removed.

- (i) Operated as a 4-stroke lean-burn engine;
- (ii) Gas Fired ~~with natural gas~~; and

APC Comment: See APC Comment for l(a).

(iii) Four (4) engines limited to a maximum site rating of 1,340 horsepower (hp), two (2) engines limited to a maximum site rating of 1,775 hp and ~~five (5)~~ three (3) engines limited to a maximum site rating of 2,370 hp.

APC Comment: There are only three (3) 3608 engines at this facility.

(b) Only the engines that are operated and controlled as specified in this permit are approved for installation under this permit.

2. Emission Limits:

(a) CO emissions from each 1,340 hp compressor engine shall not exceed 1.21 grams per hp-hour (g/hp-hr).

(b) CO emissions from each 1,775 hp or 2,370 hp compressor engine shall not exceed 1.63 g/hp-hr.

(c) Emission limits shall apply at all times, unless otherwise specified in this permit.

3. Control and Operational Requirements

(a) The Permittee shall install, continuously operate and maintain a catalytic control system on each engine that is capable of reducing the uncontrolled emissions of CO to meet the emission limits specified in this permit.

~~(b) The Permittee shall install, continuously operate and maintain temperature sensing devices (i.e. thermocouple or resistance temperature detectors) before the catalytic control system on each engine to continuously monitor the exhaust temperature at the inlet of the catalyst bed. Each temperature sensing device shall be calibrated and operated by the Permittee according to manufacturer specifications or equivalent specifications developed by the Permittee or vendor.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Condition 3(b) is unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the condition is revised as follows:

Temperature monitoring, installation, collection, operation, and maintenance shall be in accordance with the requirements of 40 CFR §63.6625.

~~(c) Except during startups, which shall not exceed 30 minutes, the engine exhaust temperature at the inlet to the catalyst bed on each engine shall be maintained at all times the engine operates with an inlet temperature of at least 450 °F and no more than 1,350 °F.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Condition 3 (c) is unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the condition is revised as follows:

Continuous compliance with catalyst temperature operating limitations and requirements shall be demonstrated in accordance with 40 CFR §63.6640.

~~(d) During operation the pressure drop across the catalyst bed on each engine shall be maintained to within ±2 inches of water from the baseline pressure drop reading taken during the initial performance test. The baseline pressure drop across the catalyst bed~~

~~shall be determined at 100% ±10% of the engine load measured during the most recent performance test or portable analyzer monitoring event, as specified in this permit.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Condition 3 (d) is unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the condition is revised as follows:

Compliance with catalyst pressure drop operating limitations and requirements shall be demonstrated in accordance with 40 CFR §63.6640.

~~(e) The Permittee shall fire each engine with natural gas only. The natural gas shall be pipeline quality in all respects except that the CO₂ concentration in the gas is not required to be within pipeline quality.~~

APC Comment: See APC comment for 1(A). APC request 2(e) be removed.

(f) The Permittee shall follow, for each engine and its respective catalytic control system, the manufacturer's recommended maintenance schedule and procedures, or equivalent procedures developed by the Permittee or vendor, to ensure optimum performance of each engine and its respective catalytic control system.

(g) The Permittee may rebuild an existing permitted engine or replace an existing permitted engine with an engine of the same hp rating, and configured to operate in the same manner as the engine being rebuilt or replaced. Any emission limits, requirements, control technologies, testing or other provisions that apply to the engines that are rebuilt or replaced shall also apply to the replaced engines.

(h) The Permittee may resume operation without the catalytic control system during an engine break-in period, not to exceed 200 operating hours, for any rebuilt or replaced engines.

4. Performance Test Requirements

(a) Performance tests shall be conducted on each engine for measuring CO to demonstrate compliance with the emission limits in this permit. The performance tests shall be conducted in accordance with appropriate reference methods specified in 40 CFR part 60, Appendix A, and/or an EPA-approved American Society for Testing and Materials (ASTM) method.

(i) The initial performance tests shall be conducted within 90 calendar days after the effective date of this permit. The results of performance tests conducted prior to the effective date of this permit may be used to demonstrate compliance with the initial performance test requirements, provided the tests were conducted in an equivalent manner as the performance test requirements in this permit.

(ii) Subsequent performance tests shall be conducted semi-annually on each engine ~~within 6 months of most recent performance test~~. After compliance is demonstrated for two consecutive tests, the testing frequency shall be reduced to annually if the facility-wide CO emissions are less than 150 tons per year (tpy). Facility-wide CO emissions shall be calculated based on the results

of the most recent test and assuming 8,760 hours of operation per year. If the total facility-wide CO emissions exceed 150 tpy, then the Permittee shall resume semi-annual testing.

APC Comment: This facility is remote and coordinating testing with the testing company as well as all the other engines APC has to test in this area is a challenge. APC requests testing with 6 months be replaced with semi-annually to provide more flexibility.

(iii) Performance tests shall be conducted within 90 calendar days of the replacement of the catalyst on each engine.

(iv) Performance tests shall be conducted within 90 calendar days of startup of all rebuilt and replacement engines.

(b) The Permittee may submit to the EPA a written request for approval of alternate test methods, but shall only use the alternate test methods after obtaining written approval from the EPA.

(c) The Permittee shall not perform engine tuning or make any adjustments to engine settings, catalytic control system settings, processes or operational parameters immediately prior to the engine testing or during the engine testing. Any such tuning or adjustments may result in a determination by the EPA that the test is invalid. Artificially increasing an engine load to meet testing requirements is not considered engine tuning or adjustments.

(d) The Permittee shall not abort any engine tests that demonstrate non-compliance with the CO emission limits.

(e) All performance tests conducted on the engines shall meet the following requirements:

(i) The pressure drop across each catalyst bed and the inlet temperature to each catalyst bed shall be measured and recorded at least once per test.

(ii) The Permittee shall measure oxygen (O₂) and CO ~~and nitrogen oxides (NO_x)~~ emissions in g/hp-hr at the outlet of the control device using a portable analyzer in accordance with EPA Reference Methods 3 and 10 at 40 CFR part 60, Appendix A, or ASTM method D6522-00 (2005). Measurements to determine O₂ and NO_x shall be made simultaneously with measurements for CO concentration. NO_x measurements shall be made with a calibrated analyzer with an approved protocol. *[Note to Permittee: Although the permit does not contain NO_x emission limits for the engines, NO_x measurement requirements have been included as an indicator to ensure compliance with Condition D.4(c) above.]*

APC Comment: As indicated, NO_x testing is being required to verify the engine hasn't been tuned specifically for CO. Since there is no limit, NO_x testing with a calibrated instrument is sufficient to verify the intent of the testing. APC suggests the reference to nitrogen oxides (NO_x) be removed in the first sentence of e(ii) and language is added to the end of the condition indicating a calibrated analyzer.

(iii) The Permittee shall convert g/hp-hr measurements using EPA Reference Method 19 at 40 CFR part 60, Appendix A, and the manufacturer's specific fuel consumption or measured fuel consumption and horsepower at the time of testing. The F-factor shall be calculated based on the most recent gas analysis.

APC Comment: As stated, these engines are fired on field gas. Added language to calculate the F-factor based on the most recent gas analysis.

(iv) All performance tests shall be conducted at maximum operating rate (90% to 110% of the maximum achievable load available at the time of the test). The Permittee may submit to the EPA a written request for approval of an alternate load level for testing, but shall only test at that alternate load level after obtaining written approval from the EPA.

(v) During each test run, data shall be collected on all parameters necessary to document how emissions were measured and calculated (such as test run length, minimum sample volume, volumetric flow rate, moisture and oxygen corrections, etc.).

(vi) Each test shall consist of at least three 1-hour or longer valid test runs. Emission results shall be reported as the arithmetic average of all valid test runs and shall be in terms of the emission limits in this permit.

(vii) Performance test plans shall be submitted to the EPA for approval 60 calendar days prior to the date the test is planned.

(viii) Performance test plans that have already been approved by the EPA for the emission units approved in this permit may be used in lieu of new test plans unless the EPA requires the submittal and approval of new test plans. The Permittee may submit new plans for EPA approval at any time.

(ix) The test plans shall include and address the following elements:

(A) Purpose of the test;

(B) Engines and catalytic control systems to be tested;

(C) Expected engine operating rate(s) during the test;

(D) Sampling and analysis procedures (sampling locations, test methods, laboratory identification);

(E) Quality assurance plan (calibration procedures and frequency, sample recovery and field documentation, chain of custody procedures); and

(F) Data processing and reporting (description of data handling and quality control procedures, report content).

(f) The Permittee shall notify the EPA at least 30 calendar days prior to scheduled performance testing. The Permittee shall notify the BP A at least 1 week prior to scheduled performance testing if the testing cannot be performed.

(g) If a permitted engine is not operating, the Permittee does not need to start up the engine solely to conduct the performance test. The Permittee may conduct the performance test when the engine is started up again.

5. Monitoring Requirements

~~(a) The Permittee shall monitor the engine exhaust temperature at the inlet to each catalyst Bed.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Condition 5(a) is unnecessary and should be removed. If EPA determines the requirements of ZZZZ

need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the condition is revised as follows:

The Permittee shall monitor the engine exhaust temperature at the inlet to each catalyst bed as required in 40 CFR §63 .6625 and 40 CFR §63 .6640.

~~(b) Except during startups, which shall not exceed 30 minutes, if the engine exhaust temperature at the inlet to the catalyst bed on any engine deviates from the acceptable range specified in this permit, then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit.~~

~~(i) Within 24 hours of determining a deviation of the engine exhaust temperature at the inlet to the catalyst bed, the Permittee shall investigate. The investigation shall include testing the temperature sensing device, inspecting the engine for performance problems and assessing the catalytic control system for possible damage that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and fouled, destroyed or poisoned catalyst).~~

~~(ii) If the engine exhaust temperature at the inlet to the catalyst bed can be corrected by following the engine manufacturer recommended procedures or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the engine exhaust temperature at the inlet to the catalyst bed Within 24 hours of inspecting the engine and catalytic control system.~~

~~(iii) If the engine exhaust temperature at the inlet to the catalyst bed cannot be corrected using the engine manufacturer's recommended procedures or equivalent procedures developed by the Permittee or vendor, or the catalytic control system has been damaged, then the affected engine shall cease operating immediately and shall not be returned to routine service until the following has been met:~~

~~(A) The engine exhaust temperature at the inlet to the catalyst bed is measured and found to be within the acceptable range for that engine; and~~

~~(B) The catalytic control system has been repaired or replaced, if necessary.~~

APC Comment: ZZZZ requirement - As discussed, APC' s position is that Condition 5(b) is unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the condition is revised as follows:

Except during startups, which shall not exceed 30 minutes, if the engine exhaust temperature at the inlet to the catalyst bed on any engine deviates from the acceptable range specified in this permit, the deviation shall be reported in accordance with 40 CFR §63.6640 and 40 CFR §63.6650.

~~(e) The Permittee shall monitor the pressure drop across the catalyst bed on each engine every 30 days, using pressure sensing devices before and after the catalyst bed to obtain a~~

~~direct reading of the differential pressure. [Note to Permittee: Differential pressure measurements, in general, are used to show the pressure across the filter elements. This information will determine when the elements of the catalyst bed are fouling, blocked or blown out and thus require cleaning or replacement.]~~

~~(d) The Permittee shall perform the first measurement of the pressure drop across the catalyst bed on each engine no more than 30 days from the date of the initial performance test. Thereafter, the Permittee shall measure the pressure drop across each catalyst bed, at a minimum, every 30 days. Subsequent performance tests, as required in this permit, can be used to meet the periodic pressure drop monitoring requirements provided it occurs within the 30-day window. The pressure drop reading can be a one-time measurement on that day, the average of performance test runs performed on that day, or an average of all the measurements on that day if continuous readings are taken.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Condition 5 (c) and (d) are unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the conditions are revised as follows:

The Permittee shall monitor the pressure drop across the catalyst bed on each engine monthly, using pressure sensing devices before and after the catalyst bed to obtain a direct reading of the differential pressure as required in 40 CFR §63.6625 and 40 CFR §63.6640.

~~(e) If the pressure drop exceeds ± 2 inches of water from the baseline pressure drop reading taken during the most recent performance test, then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit.~~

~~(i) Within 24 hours of determining a deviation of the pressure drop across the catalyst bed, the Permittee shall investigate. The investigation shall include testing the pressure transducers and assessing the catalytic control system for possible damage that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and plugged, fouled, destroyed or poisoned catalyst).~~

~~(ii) If the pressure drop across the catalyst bed can be corrected by following the catalytic control system manufacturer's recommended procedures or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the problem within 24 hours of inspecting the catalytic control system.~~

~~(iii) If the pressure drop across the catalyst bed cannot be corrected using the catalytic control system manufacturer's recommended procedures or equivalent procedures developed by the Permittee or vendor, or the catalytic control system is damaged, then the Permittee shall do one of the following:~~

~~(A) Conduct a performance test within 90 calendar days, as specified in this permit, to ensure that the emission limits are being met and to reestablish the pressure drop across the catalyst bed.~~

~~The Permittee shall perform a portable analyzer test to establish a new temporary pressure drop baseline until a performance test can be scheduled and completed; or
(B) Cease operating the affected engine immediately. The engine shall not be returned to routine service until the pressure drop is measured and found to be within the acceptable pressure range for that engine as determined from the most recent performance test. Collective action may include removal and cleaning of the catalyst or replacement of the catalyst.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Condition 5(e) is unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the condition is revised as follows:

If the pressure drop exceeds ± 2 inches of water from the baseline pressure drop reading taken during the most recent performance test, the deviation shall be reported in accordance with 40 CFR §63.6640 and 40 CFR §63.6650.

~~(f) The Permittee is not required to conduct parametric monitoring of exhaust temperature and catalyst differential pressure on an engine if it has not operated during the monitoring period. The Permittee shall certify that the engine did not operate during the monitoring period in the annual report specified in this permit.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Condition 5(f) is unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the condition is revised as follows:

The Permittee is not required to conduct parametric monitoring of exhaust temperature and catalyst differential pressure on an engine if it has not operated during the monitoring period. The Permittee shall certify that the engine did not operate during the monitoring period in the annual report specified in this permit.

6. Recordkeeping Requirements

- (a) Records shall be kept of manufacturer and/or vendor specifications for each engine, catalytic control system, temperature-sensing device and pressure-measuring device.
- (b) Records shall be kept of all calibration and maintenance conducted for each engine, catalytic control system, temperature-sensing device and pressure-measuring device.
- ~~(c) Records shall be kept that are sufficient to demonstrate that the fuel for each engine is pipeline quality natural gas in all respects, with the exception of CO₂ concentrations.~~

APC Comment: See APC Comment for D 1. (a). APC request 6(c) be removed.

~~(d) Records shall be kept of all temperature measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit.~~

~~(e) Records shall be kept of all pressure drop measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit.~~

APC Comment: ZZZZ requirement - As discussed, APC's position is that Conditions 6 (d) and (e) are unnecessary and should be removed. If EPA determines the requirements of ZZZZ need to be part of this permit, APC requests that either the rule is attached as an appendix to the permit or the conditions are revised as follows:

Records shall be kept of all temperature measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit in accordance with 40 CFR §63.6655.

Records shall be kept of all pressure drop measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit in accordance with 40 CFR §63.6655.

(f) Records shall be kept of all required testing in this permit. The records shall include the following:

- (i) The date, place, and time of sampling or measurements;
 - (ii) The date(s) analyses were performed;
 - (iii) The company or entity that performed the analyses;
 - (iv) The analytical techniques or methods used;
 - (v) The results of such analyses or measurements; and
 - (vi) The operating conditions as existing at the time of sampling or measurement.
- (g) Records shall be kept of all catalyst replacements, engine rebuilds and engine replacements.
- (h) Records shall be kept of each rebuilt or replaced engine break-in period, pursuant to the requirements of this permit, where the existing engine that has been rebuilt resumes operation without the catalyst control system, for a period not to exceed 200 hours.
- (i) Records shall be kept of each time an engine is shut down due to a deviation in the inlet temperature to the catalyst bed or pressure drop across a catalyst bed. The Permittee shall include in the record the cause of the problem, the corrective action taken, and the timeframe for bringing the pressure drop and inlet temperature range into compliance.”

EPA Response: We have revised Section D. Requirements for 4SLB Compressor Engines, generally as requested, with some differences in verbiage/style that align better with standard permit language guidelines and which we believe do not contradict the intent of the applicant's comments. Because these engines are already subject to and complying with the NESHAP for RICE at 40 CFR part 63, subpart ZZZZ, it was always the EPA's intent to develop enforceable permit terms for control of engine CO emissions that are consistent with the subpart ZZZZ requirements for reducing HAP emissions, which are also the means by which the applicant is reducing CO emissions, specifically through the use of oxidation catalyst controls.

5. **“E. Requirements for Storage Tanks**

1. Construction, Control and Operational Requirements

~~(a) The Permittee shall install, operate, and maintain no more than three (3) tanks used to store natural gas condensate and produced water, each limited to a maximum storage capacity of 4 00 barrels (bbl);~~

APC Comment: In 2011, a new inlet slug catcher system was installed. Part of system was a blow case. The blow case takes condensate recovered in the slug catcher and sends it down the pipeline for processing. The slug catcher is currently not 100 percent effective in removing the condensate from the water. The water tanks currently receive condensate carry over from the inlet slug catcher. These tanks are primarily used for water storage and the blow case is the primary process for removing condensate from the facility. As mentioned, this facility is remote and specifying the number and size of tanks limits flexibility. There could be a need to install more tanks or different sizes due to trucking limitations. Controlled emissions are reported at 1 tpy VOC. Condition 4(a) requires all tanks to be controlled. The number and size has no impact on emissions. APC requests E.I(a) be removed.

(b) The Permittee shall, at a minimum, route all natural gas condensate and produced water storage tank emissions from working, standing, breathing and flashing losses through a closed-vent system to a flare designed and operated as specified in this permit.

(c) Only the storage tanks that are operated and controlled as specified in this permit are approved for installation under this permit.

~~2. Production Limit: The total condensate and produced water processed through the storage tanks shall not exceed 13 barrels per day on average.~~

APC Comment: This facility is a true minor for VOCs and therefore only requesting to incorporate conditions from the CD. Estimated emissions are based on 13 bbls/day of condensate only and are estimated at 1 tpy VOC. APC request 2. Production Limit be removed.

3. Closed Vent Systems

~~(a) The Permittee shall design, install, continuously operate and maintain each closed vent system such that it is compliant with the following requirements:~~

~~(i) The closed vent system shall route all gases, vapors, and fumes emitted from the natural gas condensate and produced water storage tanks to the flare;~~

~~(ii) All vent lines, connections, fittings, valves, relief valves or any other appurtenance employed to contain and collect gases, vapors, and fumes and transport them to the flare shall be maintained and operated during any time the device is operating;~~

~~(iii) The closed vent system shall be designed to operate with no detectable emissions;~~

~~(iv) If the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the flare, the Permittee shall meet the one of following requirements for each bypass device:~~

- ~~(A) At the inlet to the bypass device that could divert the stream away from the flare and into the atmosphere, properly install, calibrate, maintain and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the flare and into the atmosphere;~~
~~(B) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car seal or a lock and key type configuration.~~
~~(v) The Permittee shall minimize leaks of hydrocarbon emissions from all vent lines, connections, fittings, valves, relief valves or any other appurtenance employed to contain, collect, and transport gases, vapors, and fumes to the flare.~~

APC Comment: The tank control system was designed per the CD. Condition 3(a) is not covered in the CD and APC request to be removed.

4. Flare

- (a) The Permittee shall design, install, continuously operate and maintain a flare such that the mass content of the uncontrolled VOC emissions from the natural gas condensate and produced water storage tanks are reduced by at least 95.0 percent by weight.
~~(b) The Permittee shall ensure that the flare has sufficient capacity to achieve at least a 95.0 percent VOC emission control efficiency for the minimum and maximum hydrocarbon volumetric flow rate and BTU content routed to the device.~~

APC Comment: As stated, the tank control system was designed per the CD. Condition 4(a) addresses controlling emissions from the tanks. Condition 4(b) is not covered in the CD and APC request to be removed.

- (c) The Permittee shall ensure that the flare is designed and operated in accordance with the requirements of 40 CFR 60.18(c) through (e).
(d) The Permittee shall ensure that the flare is:
(i) Operated properly at all times that natural gas condensate and produced water storage tank emissions are routed to it;
(ii) ~~Equipped and operated with a liquid knock out system to collect any condensable vapors (to prevent liquids from going through the device);~~
(iii) ~~Equipped with a flash back flame arrestor;~~
(iv) Equipped with one of the following:
(A) A continuous burning pilot flame, a thermocouple, and a malfunction alarm and notification system if the pilot flame fails; or
(B) An electronically controlled auto-ignition system with a thermocouple that reignites the pilot flame whenever it goes out. ~~a malfunction alarm and notification system if the pilot flame fails while natural gas condensate and produced water storage tank emissions are routed to it;~~
(v) ~~Maintained in a leak free condition; and~~
(vi) ~~Operated with no visible smoke emissions.~~
(e) ~~The Permittee shall follow the manufacturer's recommended maintenance schedule and operational procedures, or recommended maintenance schedule and operational procedures~~

developed by the vendor or Permittee, to ensure optimum performance of the closed vent systems and flare.

APC Comment: As stated, the tank control system was designed per the CD. Condition 4(a) addresses controlling emissions from the tanks. Conditions 4. (d)(ii), (iii), (v) and (vi) and (e) are not covered in the CD and APC request to be removed. APC request the 4(d)(iv) be revised to be consistent with the language in the CD.

5. Testing and Monitoring Requirements

~~(a) The Permittee shall measure the barrels of natural gas condensate and produced water stored in the tanks each time the liquids are unloaded from the storage tanks using process flow meters and/or sales records. At the end of each calendar month, the total barrels of natural gas condensate and produced water stored in the tanks shall be divided by the number of days in that month to calculate a daily average.~~

APC Comment: See APC Comment 2 Production Limit. APC request 5(a) be removed.

(b) The Permittee shall perform weekly inspections as follows:

(i) Auditory, visual, olfactory (AVO) inspections of tank thief hatches, covers, seals, pressure relief valves and the closed vent system, to ensure proper condition and functioning. ~~The weekly inspections shall be performed while the natural gas condensate and produced water storage tanks are being filled.~~ If any of the components are not in good working condition, they must be repaired within ~~15-30~~ days of identification of the deficient condition.

(ii) Verify the pilot light on flare is lit and if the flare is being bypassed at the time of inspection.

(c) The Permittee shall perform monthly visual inspections of the of tank thief hatches, covers, seals, pressure relief valves and the closed vent system, to ensure proper condition and functioning. ~~peak pressure and vacuum values in each tank and the closed vent system to ensure that the pressure and vacuum relief set points are not being exceeded in a way that has resulted, or might result, in venting of emissions and possible damage to equipment, and to ensure that the closed vent system operates with no detectable emissions.~~ Monthly visual inspections shall be conducted as follows:

(i) The monthly inspections shall be performed using an optical gas imaging instrument ~~and while the natural gas condensate and produced water storage tanks are being filled;~~

(ii) If any detectable ~~or visible smoke~~ emissions are detected using the optical gas imaging instrument, they must be repaired within 30 days of identification of the deficient condition. ~~The Permittee shall take the following actions, as applicable:~~

~~(A) The Permittee shall demonstrate that the natural gas condensate and produced water storage tanks and the closed vent system operate with no detectable emissions using the procedures specified in EPA Method 21 at 40 CFR part 60, Appendix A potential leak is determined to operate with no detectable emissions if the VOC concentration value measured by the Method 21 detection instrument is less than 500 parts per million volume (ppmv);~~

~~(B) If the closed vent system or flare fail the detectable emissions or visual emissions test, the Permittee shall follow the manufacturer's, vendor's, or Permittee's repair instructions to return~~

the emissions source to compliant operation. All repairs and maintenance activities shall be recorded in a maintenance and repair log and shall be made available for inspection;

~~(e) Upon return to operation from any repair and maintenance activity, the closed vent system or flare shall pass a Method 21 or Method 22 test, as applicable;~~

~~(D) If the closed vent system or flare fail a follow up Method 21 or Method 22 test, the Permittee shall repeat the procedures in paragraphs (A) through (C) of this section, as applicable, until the closed vent system or flare passes a follow up test; and~~

~~(E) The monthly VOC emissions calculations required in this permit shall account for the time periods between each failed detectable emissions or visible emissions test, as applicable, and subsequent compliant tests, assuming the emissions were uncontrolled.~~

~~(d) The Permittee shall monitor the operation of the flare to confirm proper operation and demonstrate compliance with the VOC control efficiency requirements of this permit as follows:~~

~~(i) Continuously monitor the flare operation, using a malfunction alarm and remote notification system for failures, and checking the system for proper operation whenever an operator is on site, at least weekly;~~

~~(ii) Continuously monitor all variable operational parameters specified in the manufacturer's written operating instructions and procedures;~~

~~(iii) Respond to any observation of improper monitoring equipment operation or any alarm of pilot flame failure and ensure that monitoring equipment is returned to proper operation and/or the pilot flame is relit as soon as practically and safely possible after an observation or an alarm sounds;~~

APC Comment: The CD does not require AVO or OGI monitoring. APC is currently performing inspections as detailed in 5(b) and (c)(i) and (ii). APC accepts inclusion of 5(b) and (c)(i) and (ii) with the suggested wording changes. Conditions c(ii)(A-E) and (d) are not a requirement of the CD and request to be removed. The CD requires weekly inspections to verify the pilot light is lit and if the flare is being bypassed at the time of inspections.

~~(iv) Perform monthly visual inspections of the flare to ensure it operates with no visible smoke emissions. Monthly visual inspections shall be conducted as follows:~~

~~(A) The monthly inspections shall be performed using an optical gas imaging instrument and while the natural gas condensate and produced water storage tanks are being filled;~~

~~(B) If any visible smoke emissions are detected using the optical gas imaging instrument, the Permittee shall take the following actions:~~

~~(A) The Permittee shall demonstrate that the flare operates with no visible emissions, except for periods not to exceed a total of 2 minutes during any hour, using the procedures specified in EPA Method 22 at 40 CFR part 60, Appendix A. The observation period shall be 1 hour;~~

APC Comment: Using OGI to determine presence of visual emissions from the flare is not required by the CD. APC request (iv)(A) be removed. APC request (iv)(B) be revised to remove the reference to optical gas imaging.

(II) If the flare fails the visual emissions test, the Permittee shall follow the manufacturer's, vendor's, or Permittee's repair instructions to return the flare to compliant operation. All repairs and maintenance activities shall be recorded in a maintenance and repair log and shall be made available for inspection;

(III) Upon return to operation from any repair and maintenance activity, the flare shall pass a Method 22 test; and

(IV) If the flare fails a follow up Method 22 test, the Permittee shall repeat the procedures in paragraphs (I) through (III) of this section, until the flare passes a follow up test.

~~(e) The monthly VOC emissions calculations required in this permit shall account for the time periods between each failed detectable emissions or visible emissions test, as applicable, and subsequent compliant tests, assuming the emissions were uncontrolled.~~

~~(f) Where sufficient to meet the monitoring requirements in this section, the owner or operator may use a SCA.DA system to monitor and record the required data in paragraphs (a) through (d).~~

~~6. VOC Emissions Calculation Requirements: VOC emissions from each natural gas condensate and produced water storage tank at the facility due to working, standing, breathing and flashing losses for each calendar month shall be calculated using a generally accepted simulation model or software (e.g., ProMax) and the following:~~

~~(a) The total measured volume of natural gas condensate and produced water transferred to the storage tanks for the month;~~

~~(b) The VOC emissions control efficiency of the flare; and~~

~~(c) The actual physical and chemical properties of the natural gas condensate and its associated vapors from the most recent semiannual extended laboratory analysis of the natural gas condensate received at the facility.~~

7. Recordkeeping Requirements: The Permittee shall document and maintain the following records:

~~(a) The monthly and average daily barrels of condensate and produced water processed through the storage tanks;~~

~~(b) All natural gas condensate and produced water storage tank, closed vent system, and flare inspections. All natural gas condensate and produced water storage tank closed vent system, and Tank and flare inspection records shall include, at a minimum, the following information:~~

~~(i) The date of the inspection;~~

~~(ii) All documentation and/or images produced in the inspection;~~

~~(iii) The findings of the inspection;~~

~~(iv) Any corrective action taken; and~~

~~(v) The inspector's name and signature.~~

~~(e) The monthly VOC emissions, in tons, from each natural gas condensate and produced water storage tank and the emission calculations.~~

APC Comment: APC requests Conditions 7(a) be removed. See APC Comment 2 Production Limit. Wording in condition 7(b) has been revised to reflect CD monitoring requirements.

APC Comment: As mentioned, APC is moving towards termination of the Kerr McGee March 27, 2008 Consent Decree. To avoid having two documents to comply with, APC requests the following condition be added making the conditions under Condition E. Requirements for the Storage Tanks effective upon termination of the CD.

Requirements under Condition E. Requirements for the Storage Tanks shall be effective upon termination of the Kerr McGee March 27, 2008 Consent Decree.”

EPA Response: We have revised Section E. Requirements for Storage Tanks, generally as requested, with some differences in verbiage/style that align better with standard permit language guidelines and which we believe do not contradict the intent of the applicant’s comments. As stated earlier in this Response to Comments, it was always the EPA’s intent to develop permit terms that memorialized the conditions of the Consent Decree that the Permittee desired to remain enforceable after its eventual termination. In some cases, language from a Consent Decree does not necessarily comport with standard permit language style and requirements, which can make drafting permit conditions somewhat challenging. After considering that the facility is a true minor source of VOC emissions and the tank control system was designed according to the Consent Decree, we determined that the requested revisions to the proposed permit, with inclusion only of the design requirements of the Consent Decree, are sufficient to provide ongoing enforceability for the storage tank emissions. We also agree that it is prudent to make requirements in the MNSR permit that were drafted from the Consent Decree effective only upon termination of the Consent Decree to avoid the applicant having two documents to comply with that contain duplicative requirements.

6. **“F. Requirements for Pneumatic Controllers**

1. All pneumatic controllers shall be operated using only instrument air or low-bleed controllers.

APC Comment: Added low-bleed controllers to be consistent with CD.

2. Records shall be kept of manufacturer's and/or vendor's specifications for each pneumatic controller that is not operated on instrument air.

APC Comment: This information is only necessary if the controller is not operated on instrument air. APC suggest adding the additional language.

APC Comment: As mentioned, APC is moving towards termination of the Kerr McGee March 27, 2008 Consent Decree. To avoid having two documents to comply with, APC requests the following condition be added making the conditions under Condition E. Requirements for the Pneumatic Controllers effective upon termination of the CD.

Requirements under Condition F. Requirements for Pneumatic Controllers shall be effective upon termination of the Kerr McGee March 27, 2008 Consent Decree.”

EPA Response: We have revised Section F. Requirements for Pneumatic controllers, generally as requested, with some differences in verbiage/style that align better with standard permit language guidelines and which we believe do not contradict the intent of the applicant’s comments. As stated earlier in this Response to Comments, it was always the EPA’s intent to develop permit terms that memorialized the conditions of the Consent Decree that the Permittee desired to remain enforceable after its eventual termination. We also agree that it is prudent to make requirements in the MNSR permit that were drafted from the Consent Decree effective only upon termination of the Consent Decree to avoid the applicant having two documents to comply with that contain duplicative requirements.

**United States Environmental Protection Agency
Region 8, Air Program
1595 Wynkoop Street
Denver, CO 80202**



**Air Pollution Control
Synthetic Minor Source Permit to Construct**

40 CFR 49.151

SMNSR-UO-000007-2012.001

*Permit to Construct to establish legally and practically enforceable
limitations and requirements on sources at an existing facility.*

Permittee:

Anadarko Uintah Midstream, LLC

Permitted Facility:

Cottonwood Wash Compressor Station
Uintah and Ouray Indian Reservation
Uintah County, Utah

Summary

On August 30, 2012, we received an application from Anadarko Uintah Midstream, LLC (Anadarko) requesting a synthetic minor permit for the Cottonwood Wash Compressor Station in accordance with the requirements of the Tribal Minor New Source Review (MNSR) Permit Program at 40 CFR part 49. We received a new application replacing the original application on September 20, 2013, with additional supplementary information on August 28, 2014, and July 21, 2015. The EPA held a public comment period for the proposed permit from December 9, 2016, through January 9, 2017. Changes were made to the proposed permit based on public comments received.

This permit action applies to an existing facility operating on Indian country lands within the Uintah and Ouray Indian Reservation in Utah.

This permit does not authorize the construction of any new emission sources, or emission increases from existing units, nor does it otherwise authorize any other physical modifications to the facility or its operations. This permit is only intended to incorporate required and requested enforceable emission limits and operational restrictions from a March 27, 2008, Federal Consent Decree between the United States of America (Plaintiff), and the State of Colorado, the Rocky Mountain Clean Air Action and the Natural Resources Defense Council (Plaintiff-Intervenors), and Kerr-McGee Corporation (Civil Action No. 07-CV-01034-EWN-KMT), and the September 20, 2013 synthetic MNSR application and supplementary submittals (see 40 CFR 49.151(c)(1)(ii)(d)) and 49.158(c)(4)(ii) and (iii)). Anadarko requested legally and practically enforceable requirements for the installation and operation of a low-emission tri-ethylene glycol (TEG) dehydration system for control of volatile organic compound (VOC) emissions. Anadarko also requested enforceable requirements for installation and operation of a flare to control VOC emissions from natural gas condensate and produced water storage tanks at the facility. Additionally, Anadarko requested enforceable requirements for control of carbon monoxide (CO) emissions resulting from installation and operation of a catalytic control system on each of nine (9) natural gas-fired 4-stroke lean-burn (4SLB) reciprocating internal combustion engines used for natural gas compression at the facility due to applicable and independently enforceable hazardous air pollutant emissions control requirements under the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines (RICE) at 40 CFR part 63, subpart ZZZZ. Lastly, Anadarko requested an enforceable requirement to install and operate only instrument air-driven pneumatic controllers.

Upon compliance with the permit, Anadarko will have legally and practically enforceable restrictions on emissions that can be used when determining the applicability of other Clean Air Act (CAA) permitting requirements, such as those imposed by the Prevention of Significant Deterioration (PSD) Permit Program at 40 CFR part 52 and the Title V Operating Permit Program at 40 CFR part 71 (part 71).

The EPA has determined that issuance of this MNSR permit will not contribute to National Ambient Air Quality Standards (NAAQS) violations, or have potentially adverse effects on ambient air quality.

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I. Conditional Permit to Construct

A. General Information

<u>Facility:</u>	Anadarko Uintah Midstream, LLC – Cottonwood Wash Compressor Station
<u>Permit number:</u>	SMNSR-UO-000007-2012.001
<u>SIC Code and SIC Description:</u>	1311- Crude Petroleum and Natural Gas
<u>Site Location:</u>	<u>Corporate Office Location</u>
Cottonwood Wash Compressor Station	Anadarko Uintah Midstream, LLC
Sec 27 T9S R21E	P.O. Box 173779
Uintah and Ouray Indian Reservation	Denver, Colorado 80202-3779
Uintah County, Utah	
Latitude 40.009722, Longitude -109.543889	

The equipment listed in this permit shall be operated by Anadarko Uintah Midstream, LLC at the location described above.

B. Applicability

1. This federal Permit to Construct is being issued under authority of the MNSR Permit Program.
2. The requirements in this permit have been created, at the Permittee's request and pursuant to the MNSR permit program, to establish legally and practically enforceable emissions restrictions for control of VOC emissions from a TEG dehydration system, produced water storage tanks and pneumatic controllers and control of CO emissions from gas-fired engines.
3. Any conditions established for this facility or any specific units at this facility pursuant to any permit issued under the authority of the PSD Permit Program or the MNSR Permit Program shall continue to apply.
4. By issuing this permit, EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner and/or Operator, if the conditions of this permit are not met by the Permittee, Owner and/or Operator.

C. Requirements for the Low-Emission Dehydrator

1. Construction and Operational Limits
 - (a) The Permittee shall install, operate and maintain no more than one (1) TEG Low-Emission Dehydration unit that meets the specifications set forth in Appendix A of this permit and shall mean a dehydration unit that:
 - (i) Incorporates an integral vapor recovery function such that the dehydrator cannot operate independent of the vapor recovery function;
 - (ii) Either returns the captured vapors to the inlet of the facility where the dehydrator is located or routes the captured vapors to the facility's fuel gas supply header; and

- (iii) Is designed and operated to emit less than 1.0 ton of VOC in any consecutive 12-month period, inclusive of VOC emissions from the reboiler burner.
 - (b) Only the dehydration unit that is designed and operated as specified in this permit is approved for installation and operation under this permit.
- 2. Monitoring Requirements: The Permittee shall monitor for leaks of hydrocarbon emissions from all vent lines, connections, fittings, valves, relief valves or any other appurtenance employed to contain, collect and transport gases, vapors and fumes to the VRU as follows:
 - (a) Visit the facility on a quarterly basis to inspect for defects that could result in air emissions and document each inspection. Defects include, but are not limited to, visible cracks, holes or gaps in piping; loose connections; or broken or missing caps or other closure devices. If a quarterly visit is not feasible due to sudden, infrequent and unavoidable events (e.g. weather, road conditions), every effort shall be made to visit the facility as close to quarterly as possible;
 - (b) The inspections shall be based on audio, visual and olfactory procedures; and
 - (c) Any leaks detected in the closed-vent system shall be addressed immediately unless the repair requires resources not currently available. If the resources are not available, the leak shall be repaired no later than 30 days after initial detection of the leak.
- 3. Recordkeeping Requirements
 - (a) Records shall be kept of the manufacturer specifications for each TEG Low-Emission Dehydration unit.
 - (b) Records shall be kept of all required inspections, including repairs made in response to leaks detected in the closed-vent system.
- 4. Requirements under Section C. Requirements for the Low-Emission Dehydrator shall be effective upon termination of the March 27, 2008, Federal Consent Decree between the United States of America (Plaintiff), and the State of Colorado, the Rocky Mountain Clean Air Action and the Natural Resources Defense Council (Plaintiff-Intervenors), and Kerr-McGee Corporation (Civil Action No. 07-CV-01034-EWN-KMT).

D. Requirements for 4SLB Compressor Engines

- 1. Construction and Operational Requirements
 - (a) The Permittee shall install and operate emission controls as specified in this permit on nine (9) existing engines used for field gas compression, all meeting the following specifications:
 - (i) Operated as a 4-stroke lean-burn engine;
 - (ii) Fired with field gas; and
 - (iii) Four (4) engines limited to a maximum site rating of 1,340 horsepower (hp), two (2) engines limited to a maximum site rating of 1,775 hp and three (3) engines limited to a maximum site rating of 2,370 hp.

- (b) Only the engines that are operated and controlled as specified in this permit are approved for installation under this permit.

2. Emission Limits

- (a) CO emissions from each 1,340 hp compressor engine shall not exceed 1.21 grams per hp-hour (g/hp-hr).
- (b) CO emissions from each 1,775 hp or 2,370 hp compressor engine shall not exceed 1.63 g/hp-hr.
- (c) Emission limits shall apply at all times, unless otherwise specified in this permit.

3. Control and Operational Requirements

- (a) The Permittee shall install, continuously operate and maintain a catalytic control system on each engine that is capable of reducing the uncontrolled emissions of CO to meet the emission limits specified in this permit.
- (b) For each engine, the Permittee shall comply with the installation, collection, operation and maintenance requirements at 40 CFR 63.6625 that apply to an owner or operator of a new or reconstructed non-emergency 4SLB stationary RICE with a site rating greater than 500 hp located at a major source of HAP that is complying with the requirement to reduce CO emissions or limit the concentration of formaldehyde emissions, and is using an oxidation catalyst.
- (c) For each engine, the Permittee shall meet the operating limitations specified in Table 2b of 40 CFR part 63, subpart ZZZZ that apply to an owner or operator of a new or reconstructed non-emergency 4SLB stationary RICE with a site rating greater than 500 hp located at a major source of HAP that is complying with the requirement to reduce CO emissions or limit the concentration of formaldehyde emissions, and is using an oxidation catalyst.
- (d) The Permittee shall follow, for each engine and its respective catalytic control system, the manufacturer's recommended maintenance schedule and procedures or equivalent procedures developed by the Permittee or vendor, to ensure optimum performance of each engine and its respective catalytic control system.
- (e) The Permittee may rebuild an existing permitted engine or replace an existing permitted engine with an engine of the same hp rating, and configured to operate in the same manner as the engine being rebuilt or replaced. Any emission limits, requirements, control technologies, testing or other provisions that apply to the engines that are rebuilt or replaced shall also apply to the replaced engines.
- (f) The Permittee may resume operation without the catalytic control system during an engine break-in period, not to exceed 200 operating hours, for any rebuilt or replaced engines.

4. Performance Test Requirements

- (a) Performance tests shall be conducted on each engine for measuring CO to demonstrate compliance with the emission limits in this permit. The performance tests shall be conducted in accordance with appropriate reference methods specified in 40 CFR part 60, appendix A, and/or an EPA-approved American Society for Testing and Materials (ASTM) method.
 - (i) The initial performance tests shall be conducted within 90 calendar days after the effective date of this permit. The results of performance tests conducted prior to the effective date of this permit may be used to demonstrate compliance with the initial performance test requirements, provided the tests were conducted in an equivalent manner as the performance test requirements in this permit.
 - (ii) Subsequent performance tests shall be conducted semi-annually on each engine. After compliance is demonstrated for two (2) consecutive tests, the testing frequency shall be reduced to annually if the facility-wide CO emissions are less than 150 tons per year (tpy). Facility-wide CO emissions shall be calculated based on the results of the most recent test and assuming 8,760 hours of operation per year. If the total facility-wide CO emissions exceed 150 tpy, then the Permittee shall resume semi-annual testing.
 - (iii) Performance tests shall be conducted within 90 calendar days of the replacement of the catalyst on each engine.
 - (iv) Performance tests shall be conducted within 90 calendar days of startup of all rebuilt and replacement engines.
- (b) The Permittee may submit to the EPA a written request for approval of alternate test methods, but shall only use the alternate test methods after obtaining written approval from the EPA.
- (c) The Permittee shall not perform engine tuning or make any adjustments to engine settings, catalytic control system settings, processes or operational parameters immediately prior to the engine testing or during the engine testing. Any such tuning or adjustments may result in a determination by the EPA that the test is invalid. Artificially increasing an engine load to meet testing requirements is not considered engine tuning or adjustments.
- (d) The Permittee shall not abort any engine tests that demonstrate non-compliance with the CO emission limits.
- (e) All performance tests conducted on the engines shall meet the following requirements:
 - (i) The pressure drop across each catalyst bed and the inlet temperature to each catalyst bed shall be measured and recorded at least once per test.
 - (ii) The Permittee shall measure oxygen (O₂) and CO emissions in g/hp-hr at the outlet of the control device using a portable analyzer in accordance with EPA Reference Method 10 at 40 CFR part 60, appendix A, or ASTM method D6522-00 (2005). NO_x measurements shall be made using a calibrated portable analyzer and a protocol approved by the EPA. Measurements to determine O₂ and NO_x

shall be made simultaneously with measurements for CO concentration. *[Note to Permittee: Although the permit does not contain NO_x emission limits for the engines, NO_x measurement requirements have been included as an indicator to ensure compliance with Condition D.4(c) above.]*

- (iii) The Permittee shall convert g/hp-hr measurements using EPA Reference Method 19 at 40 CFR part 60, appendix A, and the manufacturer's specific fuel consumption or measured fuel consumption and horsepower at the time of testing. The F-factor shall be calculated based on the most recent field gas analysis.
- (iv) All performance tests shall be conducted at maximum operating rate (90% to 110% of the maximum achievable load available at the time of the test). The Permittee may submit to the EPA a written request for approval of an alternate load level for testing, but shall only test at that alternate load level after obtaining written approval from the EPA.
- (v) During each test run, data shall be collected on all parameters necessary to document how emissions were measured and calculated (such as test run length, minimum sample volume, volumetric flow rate, moisture and oxygen corrections, etc.).
- (vi) Each test shall consist of at least three 1-hour or longer valid test runs. Emission results shall be reported as the arithmetic average of all valid test runs and shall be in terms of the emission limits in this permit.
- (vii) Performance test plans shall be submitted to the EPA for approval 60 calendar days prior to the date the test is planned.
- (viii) Performance test plans that have already been approved by the EPA for the emission units approved in this permit may be used in lieu of new test plans unless the EPA requires the submittal and approval of new test plans. The Permittee may submit new plans for EPA approval at any time.
- (ix) The test plans shall include and address the following elements:
 - (A) Purpose of the test;
 - (B) Engines and catalytic control systems to be tested;
 - (C) Expected engine operating rate(s) during the test;
 - (D) Sampling and analysis procedures (sampling locations, test methods, laboratory identification);
 - (E) Quality assurance plan (calibration procedures and frequency, sample recovery and field documentation, chain of custody procedures); and
 - (F) Data processing and reporting (description of data handling and quality control procedures, report content).
- (f) The Permittee shall notify the EPA at least 30 calendar days prior to scheduled performance testing. The Permittee shall notify the EPA at least 1 week prior to scheduled performance testing if the testing cannot be performed.

- (g) If a permitted engine is not operating, the Permittee does not need to start up the engine solely to conduct the performance test. The Permittee may conduct the performance test when the engine is started up again.

5. Monitoring Requirements

- (a) The Permittee shall monitor the exhaust temperature at the inlet to each catalyst bed in accordance with the requirements at 40 CFR 63.6625, 40 CFR 63.6640, and Table 6 of 40 CFR part 63, subpart ZZZZ, that apply to an owner or operator of a new or reconstructed non-emergency 4SLB stationary RICE with a site rating greater than 500 hp located at a major source of HAP that is complying with the requirement to reduce CO emissions or limit the concentration of formaldehyde emissions, and is using an oxidation catalyst.
- (b) Except during startups, which shall not exceed 30 minutes, if the engine exhaust temperature at the inlet to the catalyst bed on any engine deviates from the acceptable range specified in 40 CFR 63.6625, the deviation shall be reported in accordance with the requirements at 40 CFR 63.6640 and 63.6650.
- (c) The Permittee shall monitor the pressure drop across the catalyst bed on each engine monthly, using pressure sensing devices before and after the catalyst bed to obtain a direct reading of the differential pressure in accordance with the requirements at 40 CFR 63.6625, 40 CFR 63.6640, and Table 6 of 40 CFR part 63, subpart ZZZZ, that apply to an owner or operator of a new or reconstructed non-emergency 4SLB stationary RICE with a site rating greater than 500 hp located at a major source of HAP that is complying with the requirement to reduce CO emissions or limit the concentration of formaldehyde emissions, and is using an oxidation catalyst.
- (d) If the pressure drop exceeds ± 2 inches of water from the baseline pressure drop reading taken during the most recent performance test, the deviation shall be reported in accordance with the requirements at 40 CFR 63.6640 and 63.6650.
- (e) The Permittee is not required to conduct parametric monitoring of exhaust temperature and catalyst differential pressure on an engine if it has not operated during the monitoring period. The Permittee shall certify that the engine did not operate during the monitoring period in the annual report required in this permit.

6. Recordkeeping Requirements

- (a) Records shall be kept of manufacturer and/or vendor specifications for each engine, catalytic control system, temperature-sensing device and pressure-measuring device.
- (b) Records shall be kept of all calibration and maintenance conducted for each engine, catalytic control system, temperature-sensing device and pressure-measuring device.
- (c) Records shall be kept of all temperature measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit in accordance with the requirements at 40 CFR 63.6655 that apply to an owner or operator of a new or reconstructed non-emergency 4SLB stationary RICE with a site rating greater than 500

- hp located at a major source of HAP that is complying with the requirement to reduce CO emissions or limit the concentration of formaldehyde emissions, and is using an oxidation catalyst.
- (d) Records shall be kept of all pressure drop measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit in accordance with the requirements at 40 CFR 63.6655 that apply to an owner or operator of a new or reconstructed non-emergency 4SLB stationary RICE with a site rating greater than 500 hp located at a major source of HAP that is complying with the requirement to reduce CO emissions or limit the concentration of formaldehyde emissions, and is using an oxidation catalyst.
 - (e) Records shall be kept of all required testing in this permit. The records shall include the following:
 - (i) The date, place and time of sampling or measurements;
 - (ii) The date(s) analyses were performed;
 - (iii) The company or entity that performed the analyses;
 - (iv) The analytical techniques or methods used;
 - (v) The results of such analyses or measurements; and
 - (vi) The operating conditions as existing at the time of sampling or measurement.
 - (f) Records shall be kept of all catalyst replacements, engine rebuilds and engine replacements.
 - (g) Records shall be kept of each rebuilt or replaced engine break-in period, pursuant to the requirements of this permit, where the existing engine that has been rebuilt resumes operation without the catalyst control system, for a period not to exceed 200 hours.
 - (h) Records shall be kept of each time an engine is shut down due to a deviation in the inlet temperature to the catalyst bed or pressure drop across a catalyst bed. The Permittee shall include in the record the cause of the problem, the corrective action taken and the timeframe for bringing the pressure drop and inlet temperature range into compliance.

E. Requirements for Storage Tanks

1. Construction, Control and Operational Requirements

- (a) The Permittee shall, at a minimum, route all natural gas condensate and produced water storage tank emissions from working, standing, breathing and flashing losses through a closed-vent system to a flare designed and operated as specified in this permit.
- (b) Only the storage tanks that are operated and controlled as specified in this permit are approved for installation under this permit.

2. Flare

- (a) The Permittee shall design, install, continuously operate and maintain a flare such that the mass content of the uncontrolled VOC emissions from the natural gas condensate and produced water storage tanks are reduced by at least 95.0% by weight.
- (b) The Permittee shall ensure that the flare is designed and operated in accordance with the requirements of 40 CFR 60.18(c) through (e).
- (c) The Permittee shall ensure that the flare is:
 - (i) Operated properly at all times that natural gas condensate and produced water storage tank emissions are routed to it;
 - (ii) Equipped with one of the following:
 - (A) A continuous burning pilot flame, a thermocouple and a malfunction alarm and notification system if the pilot flame fails; or
 - (B) An auto-ignition system with a thermocouple that reignites the pilot flame whenever it goes out.

3. Testing and Monitoring Requirements

- (a) The Permittee shall perform weekly inspections as follows:
 - (i) Auditory, visual, olfactory (AVO) inspections of tank thief hatches, covers, seals, pressure relief valves and the closed vent system, to ensure proper condition and functioning. If any of the components are not in good working condition, they must be repaired within 30 days of identification of the deficient condition.
 - (ii) Verify the pilot light on the flare is lit and if the flare is being bypassed at the time of inspection.
- (b) The Permittee shall perform monthly visual inspections of tank thief hatches, covers, seals, pressure relief valves and the closed-vent system to ensure proper condition and functioning. Monthly visual inspections shall be conducted as follows:
 - (i) The monthly inspections shall be performed using an optical gas imaging instrument;
 - (ii) If any detectable emissions are detected using the optical gas imaging instrument, they must be repaired within 30 days of identification of the deficient condition.
- (c) The Permittee shall perform monthly visual inspections of the flare to ensure it operates with no visible smoke emissions. If any visible smoke emissions are detected, the Permittee shall take the following actions:
 - (i) The Permittee shall demonstrate that the flare operates with no visible emissions, except for periods not to exceed a total of 2 minutes during any hour, using the

procedures specified in EPA Method 22 at 40 CFR part 60, appendix A. The observation period shall be 1 hour;

- (ii) If the flare fails the visual emissions test, the Permittee shall follow the manufacturer's, vendor's, or Permittee's repair instructions to return the flare to compliant operation. All repairs and maintenance activities shall be recorded in a maintenance and repair log and shall be made available for inspection;
 - (iii) Upon return to operation from any repair and maintenance activity, the flare shall pass a Method 22 test; and
 - (iv) If the flare fails a follow up Method 22 test, the Permittee shall repeat the procedures in paragraphs (I) through (III) of this section, until the flare passes a follow up test.
4. **Recordkeeping Requirements:** The Permittee shall document and maintain records of all natural gas condensate and produced water storage tank and flare inspections. All natural gas condensate and produced water storage tank and flare inspection records shall include, at a minimum, the following information:
- (a) The date of the inspection;
 - (b) All documentation and/or images produced in the inspection;
 - (c) The findings of the inspection;
 - (d) Any corrective action taken; and
 - (e) The inspector's name and signature.
5. Requirements under Section E. Requirements for Storage Tanks shall be effective upon termination of the March 27, 2008, Federal Consent Decree between the United States of America (Plaintiff), and the State of Colorado, the Rocky Mountain Clean Air Action and the Natural Resources Defense Council (Plaintiff-Intervenors), and Kerr-McGee Corporation (Civil Action No. 07-CV-01034-EWN-KMT).

F. Requirements for Pneumatic Controllers

- 1. All pneumatic controllers shall be low-bleed controllers or operated using instrument air.
- 2. Records shall be kept of manufacturer's and/or vendor's specifications for each pneumatic controller that is not operated using instrument air.
- 3. Requirements under Section F. Requirements for Pneumatic Controllers shall be effective upon termination of the March 27, 2008, Federal Consent Decree between the United States of America (Plaintiff), and the State of Colorado, the Rocky Mountain Clean Air Action and the Natural Resources Defense Council (Plaintiff-Intervenors), and Kerr-McGee Corporation (Civil Action No. 07-CV-01034-EWN-KMT)

G. Requirements for Records Retention

- 1. The Permittee shall retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records shall be kept in the vicinity of the facility, such as at the facility, the location that has day-to-day operational control over the facility or the location that has day-to-day responsibility for compliance of the facility.

H. Requirements for Reporting

1. Annual Emission Reports

- (a) The Permittee shall submit a written annual report of the actual annual emissions from all emission units at the facility covered under this permit each year no later than April 1st. The annual report shall cover the period for the previous calendar year. All reports shall be certified to truth and accuracy by the responsible official.

- (b) The report shall include CO emissions, as applicable.

- (c) The report shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Partnerships and Regulatory Assistance
Tribal Air Permitting Program, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

The report may be submitted via electronic mail to R8AirPermitting@epa.gov.

2. All other documents required to be submitted under this permit, with the exception of the Annual Emission Reports, shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

Documents may be submitted via electronic mail to R8AirReportEnforcement@epa.gov.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of emission or operational limits specified in this permit and a description of any corrective actions or preventative measures taken. A “prompt” deviation report is one that is post marked or submitted via electronic mail to r8airreportenforcement@epa.gov as follows:

- (a) Within 30 days from the discovery of a deviation that would cause the Permittee to exceed the emission limits or operational limits in this permit if left un-corrected for more than 5 days after discovering the deviation; and

- (b) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee’s ability to meet the emission limits.

4. The Permittee shall submit a written report for any required performance tests to the EPA Regional Office within 60 days after completing the tests.
5. The Permittee shall submit any record or report required by this permit upon EPA request.

II. General Provisions

A. Conditional Approval

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants this permit to construct. This authorization is expressly conditioned as follows:

1. *Document Retention and Availability:* This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.
2. *Permit Application:* The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified 10 days in advance of any significant deviation from this permit application as well as any plans, specifications or supporting data furnished.
3. *Permit Deviations:* The issuance of this permit may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.
4. *Compliance with Permit:* The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted facility/source. Noncompliance with any permit term or condition is a violation of this permit and may constitute a violation of the CAA and is grounds for enforcement action and for a permit termination or revocation.
5. *Fugitive Emissions:* The Permittee shall take all reasonable precautions to prevent and/or minimize fugitive emissions during the construction period.
6. *NAAQS and PSD Increments:* The permitted source shall not cause or contribute to a NAAQS violation or a PSD increment violation.
7. *Compliance with Federal and Tribal Rules, Regulations, and Orders:* Issuance of this permit does not relieve the Permittee of the responsibility to comply fully with all other applicable federal and tribal rules, regulations, and orders now or hereafter in effect.
8. *Enforcement:* It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
9. *Modifications of Existing Emissions Units/Limits:* For proposed modifications, as defined at 40 CFR 49.152(d), that would increase an emissions unit allowable emissions of pollutants above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a

permit modification pursuant to the MNSR regulations approving the increase. For a proposed modification that is not otherwise subject to review under the PSD or MNSR regulations, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at 40 CFR 49.159(f).

10. *Relaxation of Legally and Practically Enforceable Limits:* At such time that a new or modified source within this permitted facility/source or modification of this permitted facility/source becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility/source to otherwise emit a pollutant, such as a restriction on hours of operation, then the requirements of the PSD regulations shall apply to the source or modification as though construction had not yet commenced on the source or modification.
11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* This permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen this permit for a cause on its own initiative, e.g., if this permit contains a material mistake or the Permittee fails to assure compliance with the applicable requirements.
12. *Severability Clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.
13. *Property Rights:* This permit does not convey any property rights of any sort or any exclusive privilege.
14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating this permit or to determine compliance with this permit. For any such information claimed to be confidential, the Permittee shall also submit a claim of confidentiality in accordance with 40 CFR part 2, subpart B.
15. *Inspection and Entry:* The EPA or its authorized representatives may inspect this permitted facility/source during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:
 - (a) Enter upon the premises where this permitted facility/source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of this permit;
 - (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this permit;
 - (c) Inspect, during normal business hours or while this permitted facility/source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices or operations regulated or required under this permit;

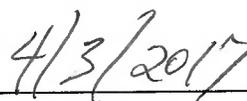
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements; and
 - (e) Record any inspection by use of written, electronic, magnetic and photographic media.
16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the proposed permit, in which case the permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within 30 days of receipt of this permit and should include the reason or reasons for rejection.
17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

U.S. Environmental Protection Agency, Region 8
Office of Partnerships and Regulatory Assistance
Tribal Air Permitting Program, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

18. *Invalidation of Permit:* Unless this permitted source of emissions is an existing source, this permit becomes invalid if construction is not commenced within 18 months after the effective date of this permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project. The Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.
19. *Notification of Start-Up:* The Permittee shall submit a notification of the anticipated date of initial startup of this permitted source to the EPA within 60 days of such date, unless this permitted source of emissions is an existing source.

B. Authorization

Authorized by the United States Environmental Protection Agency, Region 8



Monica Morales, Acting Director
Air Program

Date

Appendix A

Low-Emission Dehydrator Specifications

(Copy of Appendix C to the Consent Decree in the matter of United States of America and the State of Colorado V. Kerr-McGee Corporation, Low-Emission Dehydrator Specifications)

APPENDIX C

to the

Consent Decree

in the matter of

United States of America and the State of Colorado v. Kerr-McGee Corporation

LOW-EMISSION DEHYDRATOR SPECIFICATIONS

Overview and Purpose

Kerr-McGee has agreed to employ “Low-Emission Dehydrator” technology at its existing and planned facilities in the Uinta Basin as part of the settlement of alleged Clean Air Act violations with the United States and the State of Colorado. The terms of that settlement will be memorialized in a consent decree to be entered by the United States District Court for the District of Colorado to be styled *United States of America and the State of Colorado v. Kerr-McGee Corporation* (hereafter the “Consent Decree”). As required in the Consent Decree at Section IV.A., this Appendix C includes:

- (a) a description of physical electrical hard-wiring between the vapor recovery unit (“VRU”) compressor(s) and the glycol circulation pumps employed or to be employed, so that if the VRU compressor(s) go down then the glycol circulation pump(s) also shut down, thereby halting the circulation of glycol through the wet gas, as well as the emissions associated with the regeneration of the glycol;
- (b) a description of a second level of protection (redundancy) incorporated into a Programmable Logic Controller that uses instrumentation to shut down the glycol dehydration system in the event all VRU compressor(s) go down; and
- (c) a description of any third level of protection and discussion of how the non-condensable gases from glycol dehydrator operation shall be piped exclusively to the station inlet or fuel system for use as fuel and is not used for blanket gas in storage tanks or otherwise vented.

Background

Natural gas often contains water vapor at the wellhead which must be removed to avoid pipeline corrosion and solid hydrate formation. Glycol dehydration is the most widely used natural gas dehumidification process. In a glycol dehydration system, dry triethylene glycol (“TEG”) or ethylene glycol (“EG”) is contacted with wet natural gas. The glycol absorbs water from the natural gas, but also absorbs hydrocarbons including volatile organic compounds (“VOCs”) and certain hazardous air pollutants (“HAPs”). Pumps circulate the glycol from a low-pressure distillation column for regeneration back to high pressure in order to contact with the high pressure wet gas. As the wet glycol pressure is reduced prior to distillation, much of the absorbed hydrocarbon is released, including some of the VOCs and HAPs. A flash tank is typically utilized to separate these vapors at a pressure where they can be utilized for fuel. Distillation removes the absorbed water along with any remaining hydrocarbon, including VOCs and HAPs, from the glycol to the still column vent as overhead vapor. Conventional dehydrator still columns often emit the non-condensable portion of this overhead vapor directly to the atmosphere, or to a combustion device such as a thermal oxidizer or reboiler burner.

Kerr-McGee currently utilizes low-emission glycol dehydrators at its facilities in the Uinta Basin. These units capture the non-condensable portion of still vent and flash tank vapors and recompress the vapor with reciprocating or scroll compressors that route the

vapor to the station inlet as natural gas product, to fuel lines for power generation turbines or to the station fuel system. They also employ electric glycol circulation pumps, and except for the recompression of non-condensable vapors, resemble conventional glycol dehydrators in their configuration. See Figure 1.

To insure that the non-condensable vapor compression system is fully integrated into dehydrator operation such that the units cannot be disabled so as to operate while venting to the atmosphere, each unit;

- a. incorporates an integral vapor recovery function that prevents the dehydrator from operating independent of the vapor recovery function;
- b. either returns the captured vapors to the inlet of the facility where each glycol dehydrator is located or routes the captured vapors to that facility's fuel gas supply header; and
- c. thereby emits no more than 1.0 ton per year of VOCs.

Description of Interlocks

The low-emission glycol dehydrators have at least three (3) levels of protection to prevent emissions from occurring.

(a) Physical electrical hard-wiring between the vapor recovery unit (VRU) compressor(s) and the glycol circulation pumps ensures that if the VRU compressor(s) goes down, the glycol pump(s) also shut down, thereby halting the circulation of glycol through the wet gas as well as the emissions associated with the regeneration of glycol. More specifically:

1. Loss of station power interrupts the 480 volt power to the glycol pump(s) circulating glycol through the contactor.
2. Loss of 24 volt power to a relay interrupts the 480 volt power to the glycol pump(s) circulating glycol through the contactor. The 24 volt power is wired in parallel through the run status contacts of each VRU compressor in a specific service. If all VRU compressors in each specific service are shutdown, the 24 volt power is interrupted. There is at least one spare VRU compressor in standby mode for each specific service at existing Uinta Basin facilities engaged in gas dehydration. Non-condensable gas from VRU compressor discharge always has an outlet because if the station inlet pressure rises to a level greater than VRU compressor output, the flash tank vapors automatically go through a back pressure regulator to the fuel gas system until gathering pressure is reduced.
3. If the glycol still column/reboiler pressure rises above pressure set points, the 24 volt power to a relay is interrupted. The unpowered relay interrupts the 480 volt power to the glycol pump(s) circulating glycol to the contactor. If one of the glycol still VRU compressors is running but not compressing vapors, the pressure switch will detect the pressure rise in the still and shutdown the glycol circulating pump(s).

4. The operation of at least one of the VRU compressors is required to complete the electrical circuit and allow one of the glycol circulation pumps to operate.
 5. There is a 10 second time delay switch installed in the physical electrical circuit that must time out before the glycol circulating pump(s) shut down for causes 2 and 3 above. This allows for switching of compressors and helps to prevent false shutdowns.
 6. Everything is hard wired and does not depend on any type of controller.
- (b) A second level of protection redundancy has been incorporated by utilizing the station Programmable Logic Controller (PLC) to shut down the dehydration system in the event the VRU compressor(s) go down.
1. A PLC timer will start counting when none of the VRU compressor(s) are in operation. When the timer times out, the PLC will not allow the regenerator system to be in run status.
- (c) A third level of protection is the routing of non-condensables directly to combustion devices in the stations that utilize micro-turbine electrical generators or central heat medium systems.
1. The non-condensable regenerator overhead vapors are routed to the inlet of each station or used as fuel. In instances where the inlet pressure rises above VRU compressor outlet pressures, a regulator opens allowing the VRU-compressed vapors to be discharged into the fuel system, where they are used throughout the station.
 2. In Kerr-McGee's planned electrified compressor stations, liquids that condense at the compression stations, including those condensed from the glycol still overhead vapors, will be contained at pressure, separated from any water and pumped downstream into the high pressure gathering system. This process change will eliminate atmospheric storage of hydrocarbon liquids at such facilities.

Conclusion

Kerr-McGee's adherence to these specifications shall satisfy its commitment in the Consent Decree to utilize low-emission dehydrator technology in its existing and planned Uinta Basin operations.

