

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8  
1595 WYNKOOP STREET  
DENVER, COLORADO 80202-1129

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. § 1251 et seq; “the Act”),

**the Phoenix Production Company,**

is authorized to discharge from its **Sheldon Dome Field** wastewater treatment facility located in NE 1/4 SW 1/4 of Section 15, Township 5 North, Range 2 West, latitude 43.40820° N and longitude 108.98613° W, in Fremont County, Wyoming

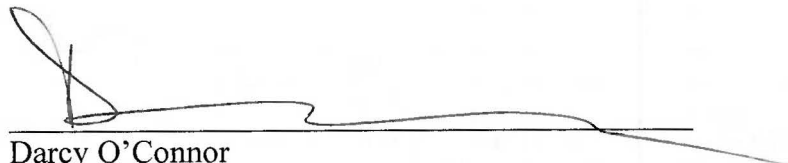
to an ephemeral tributary of Pasup (Dry) Creek, which is tributary to Wind River,

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein. Authorization for discharge is limited to those outfalls specifically listed in the permit.

This permit modification shall become effective September 1, 2016

This permit and the authorization to discharge shall expire at midnight, March 31, 2020

Signed this 20<sup>th</sup> day of July, 2016



Darcy O'Connor  
Acting Assistant Regional Administrator  
Office of Partnerships and Regulatory Assistance

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1.3.1.2. **Effective immediately after permit issuance and expiring three (3) years after the effective date of this permit**, the quality of produced water effluent discharged by the facility shall, at a minimum, meet the limitations as set forth below:

Parameter	Effluent Limitation	
	30-Day Average <u>a/</u>	Daily Maximum <u>a/</u>
Specific Conductance, $\mu\text{S}/\text{cm}$	N/A	7,500
Total Dissolved Solids, mg/L	N/A	5,000
Chloride, mg/L	N/A	2,000
Sulfate, mg/L	N/A	2,500
Total Radium 226, pCi/L	N/A	60
The concentration of oil and grease shall not exceed 10 mg/L in any sample nor shall there be a visible sheen or cause a visible sheen in the receiving waters or deposits on the bottom or shoreline of the receiving waters.		
The pH of the discharge shall not be less than 6.5 or greater than 9.0 at any time.		
There shall be no discharge of floating solids or visible foam in other than trace amounts.		

a/ See Permit Part 1.1, for definition of terms.

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1.3.1.3. **Effective three (3) years after the effective date of this permit and lasting through the life of this permit**, the quality of produced water effluent discharged by the facility shall, at a minimum, meet the limitations as set forth below:

Parameter	Effluent Limitation	
	30-Day Average <u>a/</u>	Daily Maximum <u>a/</u>
Specific Conductance, $\mu\text{S}/\text{cm}$	N/A	7,500
Total Dissolved Solids, mg/L	N/A	5,000
Chloride, mg/L	N/A	2,000
Sulfate, mg/L	N/A	2,500
Sulfide (as H <sub>2</sub> S), mg/L	200	N/A
Total Radium 226, pCi/L	N/A	60
The concentration of oil and grease shall not exceed 10 mg/L in any sample nor shall there be a visible sheen or cause a visible sheen in the receiving waters or deposits on the bottom or shoreline of the receiving waters.		
The pH of the discharge shall not be less than 6.5 or greater than 9.0 at any time.		
There shall be no discharge of floating solids or visible foam in other than trace amounts.		

a/ See Permit Part 1.1, for definition of terms.

1.3.2. Self-Monitoring Requirements - Outfall 001

**Effective immediately and lasting through the effective term of this permit.** Sampling and test procedures for pollutants listed in this part shall be in accordance with guidelines

promulgated by the Administrator in 40 CFR Part 136, as required in 40 CFR § 122.41(j). At a minimum, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Parameter	Frequency	Sample/Monitoring Type <u>a/</u>
Total Flow, MGD <u>b/</u>	Monthly	Instantaneous
Specific Conductance, $\mu\text{S}/\text{cm}$	Monthly	Grab
pH, std units	Monthly	Grab
Oil and Grease, mg/L <u>c/</u>	Weekly	Visual
Sulfide (as $\text{H}_2\text{S}$ ), mg/L <u>d/</u>	Quarterly	Grab
Chloride, mg/L	Quarterly	Grab
Sulfate, mg/L	Quarterly	Grab
Total Radium 226, pCi/L	Quarterly	Grab
Total Dissolved Solids, mg/L	Semi-Annually	Grab
Mercury, Total, $\mu\text{g}/\text{L}$ <u>e/</u>	Three times after effective date of permit	Grab
Whole Effluent Toxicity, Acute (see Part 1.3.6.)	At least four times after the effective date of permit <u>f/</u>	Grab
Toxic Pollutants Screen (see Part 1.3.4.)	Up to three times after effective date of permit	Grab

a/ See Permit Part 1.1, for definition of terms.

b/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

c/ A weekly visual observation is required. If a visible sheen is detected, a grab sample shall be taken immediately and analyzed in accordance with the requirements of 40 CFR Part 136. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

d/ The analysis for sulfide (as  $\text{H}_2\text{S}$ ) shall be done with an approved procedure that has a method detection level of no greater than 0.10 mg/L (100  $\mu\text{g}/\text{L}$ ). In the calculation of average sulfide (as  $\text{H}_2\text{S}$ ) concentrations, those analytical results that are less than 0.10 mg/L shall be considered to be zero. If all individual analytical results that would be used in the calculations are less than 0.10 mg/L, then "less than 0.10 mg/L" shall be reported on the discharge monitoring report form. Otherwise, report the maximum value and the calculated average value.

e/ Monitoring periods shall be during the 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> years after the effective date of this permit. Based on current approved analytical mercury method, Method 1631, Revision E, the method detection limit (MDL) for mercury is 0.0002  $\mu\text{g}/\text{L}$ . If the mercury trigger level of 0.77  $\mu\text{g}/\text{L}$  is exceeded during the life of the permit, the permittee is required to develop and implement the Mercury Minimization Plan (MMP), as described in Part 1.3.8.

f/ Tests shall be coordinated with the Toxic Pollutants Screen to ensure more even coverage as described in Part 1.3.6. To the extent practicable, tests shall be timed to provide results that represent seasonal variation in the discharge.

### 1.3.3. Compliance Schedule

The effluent limitation for sulfide is new with this permit renewal. In order to allow the permittee the opportunity to evaluate the measures necessary to meet the new limitation and if the permittee is not in compliance with the new sulfide effluent limitation, the permittee shall comply with the following schedule:

#### **Sulfide (as H<sub>2</sub>S)**

For the new monthly average effluent limitation for sulfide (as H<sub>2</sub>S), the EPA is proposing a three (3) year compliance schedule with the following requirements:

If not in compliance with the effluent limitation for sulfide (as H<sub>2</sub>S) in Part 1.3.1 of this permit, the permittee shall achieve compliance with the effluent limitation for sulfide (as H<sub>2</sub>S) in Part 1.3.1 of this permit in accordance with the following schedule.

The permittee shall submit the following to the permit issuing authority:

- a. An outline of the measures to be taken to achieve compliance with the effluent limitation for sulfide (as H<sub>2</sub>S) in Part 1.3.1 of this permit; and
- b. A schedule for implementing the measures described in Part a above. The schedule should include, but does not need to be limited to, milestones for planning, design, bidding, construction, etc. of the necessary site improvements.

The measures and implementation schedule described above shall be submitted no later than **12 months after the effective date of this permit.**

The permittee shall submit to the permit issuing authority a report reflecting the progress made towards achieving the milestones outlined in the schedule in Part b above by no later than **18 months after the effective date of this permit.**

The permittee shall begin implementing the measures outlined in Part a above by no later than **24 months after the effective date of this permit.**

The permittee shall submit to the permit issuing authority a report reflecting the progress made towards achieving the milestones outlined in the schedule in Part b above by no later than **30 months after the effective date of this permit.**

The permittee shall achieve compliance with the effluent limitation for sulfide (as H<sub>2</sub>S) in Part 1.3.1 of this permit by no later than **36 months after the effective date of this permit.**

Reports of compliance or noncompliance with, or any progress reports, on interim and final requirements contained in this Compliance Schedule shall be submitted no later than 14 days following each schedule date described above. If noncompliance is being reported, the reason for noncompliance shall be reported and the expected date when compliance will be achieved shall be given. The letter shall include the certification statement given in Part 4.7.4 of this permit and the letter shall be signed by a principal executive officer.

- 1.3.4. Toxic Pollutants Screen. This permit requires the permittee to monitor for the constituents listed below in the toxic pollutants screen up to three times during the life of the permit. One monitoring event will be during the 1st year after the effective date of this permit, and the second monitoring

event during the 3rd year after the effective date of this permit. A third monitoring event will be required if the permittee undertakes a hydraulic fracturing job for a well that sends produced water to this facility. In that instance, the permittee must complete a third toxic pollutants screen within one week of returning the hydraulically fractured well to production. Each of the toxic pollutants screen datasets shall be submitted to the permit issuing authority at the time of the DMR submittal for that reporting period in which the screening results were obtained. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

#### 1.3.4.1. Pollutants to Be Screened

All Volatile Organic Compounds listed in 40 CFR Part 122, Appendix D, Table II.

All Base/Neutral and Acid Organic Compounds listed in 40 CFR Part 122, Appendix D, Table II

All metals listed in 40 CFR Part 122, Appendix D, Table III, except mercury which is included in the regular self-monitoring (Part 1.3.2.).

Fluoride and iron as listed in 40 CFR Part 122, Appendix D, Table IV

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1.3.6. Acute Whole Effluent Toxicity Monitoring. At least four times after the effective date of the permit, the permittee shall conduct acute static-renewal toxicity tests on a grab sample of the produced water discharge from Outfall 001. These tests shall be coordinated with the Toxic Pollutants Screen required in Section 1.3.4. of this permit to ensure that the acute static-renewal toxicity tests are staggered with the Toxic Pollutants Screens to ensure a more even coverage during the permit term. To the extent practicable, the static-renewal toxicity tests should also be timed to provide results that represent seasonal variation in the discharge. Samples must be chilled to 0° to 6°C.

The static-renewal toxicity tests shall be conducted in accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms", EPA-821/R-02-012 (October 2002). The permittee shall conduct an acute 48-hour static-renewal toxicity test using *Daphnia magna* and an acute 96-hour static-renewal toxicity test using *Pimephales promelas*. A multi-dilution test consisting of five concentrations (12.5%, 25%, 50%, 75%, 100%) and a control is required.

The permittee or a laboratory performing the toxicity tests on behalf of the permittee is allowed to utilize the sample preparation procedure described in Section 9.1.7 of the Acute Method to remove sulfide (as H<sub>2</sub>S) from the discharge sample. This procedure may only be performed in the laboratory testing facility. The dissolved oxygen (DO) concentration in the samples should be near saturation prior to laboratory analysis. Aeration may be used to bring the DO and other gases into equilibrium with air, minimize oxygen demand, and stabilize the pH.

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. If more than 10 percent control mortality occurs, the test is not valid. The test shall be repeated until satisfactory control survival is achieved.

Regular acute toxicity test results shall be reported on the Discharge Monitoring Report (DMR) submitted for the reporting period when the acute toxicity monitoring was conducted. A

laboratory reporting form consistent with the Region 8 Toxicity Test Report Format for Acute Whole Effluent Toxicity, including all chemical and physical data as specified shall also be submitted to the permit issuing authority as an attachment to the DMR. Copies of the format may be downloaded from the Region 8 web page at <http://www.epa.gov/region8/water/wet/documents.html>.

If acute toxicity occurs in a test, the permittee shall do the following:

- (1) Notify the EPA Regional WET Coordinator within 48 hrs of when the permittee learned of the initial test failure;
- (2) Promptly take all reasonable measures necessary to immediately reduce toxicity; and
- (3) Initiate an additional test within two (2) weeks of the date of when the permittee learned of the test failure. If only one species fails, retesting may be limited to this species.

The EPA Regional WET Coordinator may waive either or both requirements (2) or (3) with justification (e.g., the toxicity has been ongoing and the permittee is in the process of conducting a toxicity identification evaluation/toxicity reduction evaluation as required in Part 1.3.7. of this permit).

Should acute toxicity occur in the second test, the permittee shall immediately begin testing once a month until further notified by the EPA Regional WET Coordinator. Accelerated monthly testing is only required for the species that failed the initial and second tests.

In addition to the accelerated monitoring, the permittee shall perform a toxicity identification evaluation/toxicity reduction evaluation as required by Part 1.3.7 of this permit to establish the cause of the toxicity, locate the source(s) of the toxicity, and develop control of, or treatment for the toxicity.

Test results from additional toxicity testing conducted (i.e. two week retest, monthly testing and TIE/TRE testing) shall be reported by the 28<sup>th</sup> of the month following the test to the following address:

Regional WET Coordinator  
Wastewater Unit (8P-W-WW)  
U.S. EPA, Region 8  
1595 Wynkoop Street  
Denver, CO 80202-1129

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1.3.9. Chemical Inventory Reporting Requirement

The permittee shall maintain an inventory of the quantities and concentrations of the specific chemicals used to formulate well treatment and workover fluids. Unless these fluids are segregated, the permittee shall submit the following information with the DMR, to the extent such information is obtainable after making reasonable inquiries to suppliers: all chemical additives in the well treatment or workover fluid, their trade names, purposes, supplier, CAS number, concentrations and amounts. The type of operation that generated the well treatment or well workover fluids shall also be reported. To the extent a Safety Data Sheet (SDS) contains the information required above, it may be submitted for purposes of complying with this provision.

For purposes of this provision, well treatment and workover fluids will be considered segregated if the permittee takes steps to recover a volume of fluid equivalent to the volume of the well treatment or workover fluid used in the job.

“Well treatment fluids” means any fluid used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled.

“Well workover fluids” means salt solutions, weighted brines, polymers, or other specialty additives used in a producing well to allow for maintenance, repair or abandonment procedures.”

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- 2.4. Reporting of Monitoring Results. Effluent monitoring results obtained during the previous six (6) months shall be summarized and reported on **one** Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Until further notice, sludge monitoring results may be reported in the testing laboratory's normal format (there is no EPA standard form at this time), but should be on letter size pages. Whole effluent toxicity (biomonitoring) results must be reported on the most recent version of the EPA Region 8's Guidance For Whole Effluent Reporting. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part 4), and submitted to the EPA Region 8 Policy, Information Management & Environmental Justice Program and the Eastern Shoshone Business Council and the Northern Arapaho Business Council at the addresses given below:

original to: U.S. EPA, Region 8  
Policy, Information Management & Environmental Justice Program (8ENF-PJ)  
Attention: Director  
1595 Wynkoop Street  
Denver, Colorado 80202-1129

copy to: Eastern Shoshone Business Council  
P.O. Box 538  
Fort Washakie, WY 82514

Northern Arapaho Business Council  
P.O. Box 396  
Fort Washakie, WY 82514

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- 2.8.1. The permittee shall report any noncompliance which **may endanger health or the environment** as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the EPA, Region 8, Site Assessment/Emergency Response Program at (303) 293-1788, the Eastern Shoshone Business Council (307) 332-3532, and the Northern Arapaho Business Council (307) 332-6120.
- 2.8.2. The following occurrences of noncompliance shall be reported by telephone to the EPA, Region 8, NPDES Enforcement Unit at (800) 227-8917 (8:00 a.m. - 4:30 p.m. Mountain Time), the Eastern Shoshone Business Council (307) 332-3532 and the Northern Arapaho Business Council

(307) 332-6120 - (8:00 a.m. - 4:30 p.m. Central Time) by the first workday following the day the permittee became aware of the circumstances.

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- 2.8.3. In addition to the notifications described in Part 2.8.1 and Part 2.8.2., a written submission shall also be provided to the USEPA, Office of Enforcement, Compliance and Environmental Justice and to the Eastern Shoshone Business Council and the Northern Arapaho Business Council within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

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- 2.10. Inspection and Entry. The permittee shall allow the Regional Administrator, or authorized representative of the Administrator (including an authorized contractor acting as a representative of the Administrator) or the Eastern Shoshone Business Council and the Northern Arapaho Business Council, upon presentation of credentials and other documents as may be required by law, to:

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- 3.5.2.5. Other information, as appropriate.

The permittee shall maintain the notebook in accordance with proper record-keeping procedures and shall make the log available for inspection, upon request, by authorized representatives of the U.S. Environmental Protection Agency or the Eastern Shoshone Business Council and the Northern Arapaho Business Council.

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- 3.7.2.1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass to the USEPA, Technical Enforcement Program, and the Eastern Shoshone Business Council and the Northern Arapaho Business Council.
- 3.7.2.2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part 2.8, Twenty-four Hour Noncompliance Reporting, to the USEPA, Technical Enforcement Program, and the Eastern Shoshone Business Council and the Northern Arapaho Business Council.

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- 4.14. Permittees in Indian Country. The EPA has not approved the Eastern Shoshone Tribe or the Northern Arapaho Tribe, or the State of Wyoming to implement the CWA NPDES program on the Wind River Indian Reservation. "Indian country" is defined at 18 U.S.C. § 1151. Therefore, the EPA directly implements the CWA NPDES program on the Wind River Indian Reservation.