

Wyoming Department of Environmental Quality  
Water Quality Division  
WYPDES Program

STATEMENT OF BASIS

RENEWAL

APPLICANT NAME: Pennaco Energy, Inc.

MAILING ADDRESS: 3601 Southern Drive  
Gillette, WY 82718

FACILITY LOCATION: Crazy Woman – East Facility, which is located in the SWNE of Section 2, the NENW of Section 11, the NESE of Section 10, the NWNW of Section 12, th NWNE of Section 14, Township 52 North, Range 77 West, and the SESW of Section 34, Township 53 North, Range 77 West all in Johnson County. The produced water will be discharged to on-channel reservoirs (class 3B), located in unnamed ephemeral tributaries (class 3B) in the Powder River (class 2ABWW). The permit requires that the produced water being discharged originate in one of the following formations: the Anderson, Pawnee and Wall coal seams.

NUMBER: WY0051543

*This permit renewal combines WY0051543 and WY0051551. Outfalls 002 and 003 and their associated reservoirs and water quality monitoring stations have been removed. Outfall locations have been updated to “as built” locations, three flow monitoring stations (FM1, FM4 and FM5) have been added and all permitted station locations have been updated to NAD83. 84 CBNG wells have been added and 16 CBNG wells have been removed. Outfalls 001, 004 and 006 have been updated from option 2 to option 1B. This permit has been renewed in accordance with all current WYPDES regulations and permitting approaches and requirements. All other effluent limits and monitoring requirements in this permit reflect current state and federal standards and guidelines.*

General Background

This facility is a typical coal bed methane production facility in which groundwater is pumped from a coal bearing formation resulting in the release of methane from the coal bed. The permit authorizes the discharge to the surface of groundwater produced in this way provided the effluent quality is in compliance with effluent limits that are established by this permit. In developing effluent limits, all state regulations and standards have been considered and the most stringent requirements incorporated into the permit. The effluent limits established in this permit are based upon Chapters 1 and 2 of the Wyoming Water Quality Rules and Regulations and other evaluations conducted by WDEQ related to this industry. This permit does not cover activities associated with discharges of drilling fluids, acids, stimulation waters or other fluids derived from the drilling or completion of the wells.

Outfall Description—Outfalls 001, 004 and 005 (Option 1B discharges)

The permittee has chosen option 1B of the coal bed methane permitting options for discharges from the above outfall(s). Under this permitting option, the produced water is immediately discharged to a class 3 surface water impoundment. This permit prohibits discharge to the nearest class 2 water (Powder River) from these outfalls. This permit authorizes discharge of CBM effluent into headwater on-channel

reservoirs from the above outfalls. The permit establishes effluent limits for the end of pipe, which are protective of all designated uses of the class 3B receiving waters defined in Chapter 1 of Wyoming Water Quality Rules and Regulations. This may include aquatic life other than fish, recreation, agriculture (livestock watering), wildlife, industry and scenic value.

**Outfall Description—Outfalls 006, 007 and 008 (Option 2 discharges)**

The permittee has chosen option 2 of the coal bed methane permitting options for discharges from this facility. Under this permitting option, the produced water is immediately discharged to a class 2 or 3 receiving stream which is eventually tributary to a class 2AB perennial water of the state. The permit establishes effluent limits for the end of pipe, which are protective of all the designated uses defined in Chapter 1 of Wyoming Water Quality Rules and Regulations. This may include drinking water, game and non-game fish, fish consumption, aquatic life other than fish, recreation, agriculture, wildlife, industry and scenic value.

The permittee is required to contain all effluent from the outfalls in the on-channel reservoir(s) at this facility, unless prior written authorization is granted by the WYPDES program for a reservoir release, in association with use of assimilative capacity credits for the Powder River Basin. In the event that such an authorization for release is granted for this facility, the authorization letter will specify the release volume, duration and individual reservoir(s) covered. In the absence of such written authorization for release, the following containment requirements will apply at the reservoir(s): The permittee will be required to contain all produced water within the reservoir(s) during "dry" operating conditions, and discharge of effluent from the reservoir(s), except during periods of time in which natural precipitation causes the reservoir(s) to overtop and spill, is prohibited. Intentional or draw-down type releases from the reservoir(s) will constitute a violation of this permit. Discharge from the reservoir(s) is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. It is the responsibility of the permittee to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES Program.

**Effluent Limits and Monitoring Requirements—Outfalls 001, 004 and 005 (Option 1B discharges)**

**Effluent Limits:** The permit establishes the following effluent limits for the above outfalls. Permit effluent limits are based on federal and state regulations and are effective as of the date of issuance. The permit requires that the pH remains within 6.5 and 9.0 standard units. Effluent limits for specific conductance (7,500 micromhos/cm) and chlorides (2,000 mg/l) are included to protect for stock and wildlife watering. These limits are based upon Wyoming Water Quality Rules and Regulations, Chapter 2 and apply at the end of pipe. This permit also establishes a dissolved iron effluent limit of 1000 µg/l. The dissolved iron effluent limit is based upon chronic aquatic life protection for class 3B waters. Based upon the results of the initial monitoring, this permit may be reopened and more stringent limits and/or monitoring and reporting required.

The reservoirs being utilized for containment of the CBM produced water were described by the permittee in their application materials as being able to effectively contain all estimated produced water, in addition to the stormwater runoff from up to a 50 year/24 hour precipitation event. Should the volume of water within the reservoirs exceed the freeboard needed to contain runoff from a 50 year/24 hour precipitation event under normal operating conditions, the permittee is required to cease discharge into

these reservoirs until the volume of water within the reservoir drops back below the 50 year/24 hour freeboard reserve.

**Monitoring Requirements:** Results are to be reported twice-yearly and if no discharge occurs at the outfall then "no discharge" is to be reported. The permit also requires that an initial monitoring of the effluent be conducted within the first 60 days of discharge and the results submitted to WDEQ and the U.S. Environmental Protection Agency within 120 days of the commencement of discharge.

This permit requires daily monitoring year-round at the flow monitoring stations (FM1, FM4, FM5) located immediately downstream of the reservoirs in order to determine if any effluent from this facility is reaching an established flow monitoring station(s). The established flow monitoring stations are located as described in Part I.B.12 (Table 1) of the permit below. This permit prohibits discharge of effluent from the reservoirs except in the event of a 50-year/24-hour storm event (*ref. "Isoplethials of 50-yr / 24-hr precipitation map," NOAA Atlas II, Volume II*) or greater. If a reservoir overtopping event occurs, verification of storm magnitude will be the responsibility of the permittee. Discharge from the reservoirs resulting from a 50-year/24-hour precipitation event or greater is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. Additional release from the reservoir(s) is not authorized. If any effluent discharged from this facility does reach the flow monitoring station (FM1, FM4, FM5) except in the event of a 50-year/24-hour storm event or greater, this permit requires the permittee to cease all discharge of effluent from the contributing wells until the effluent is no longer reaching the flow monitoring station(s). Any effluent from this facility that reaches the established flow monitoring station(s), except as the direct result of reservoir(s) overtopping during a 50-year / 24-hour storm event or greater, will constitute a violation of this permit and must be corrected by the permittee immediately.

**Effluent Limits and Monitoring Requirements—Outfalls 006, 007 and 008 (Option 2 discharges)**

**Effluent Limits:** Permit effluent limits are based on federal and state regulations and are effective as of the date of issuance. The permit requires that the pH must remain within 6.5 and 9.0 standard units based upon *Wyoming Water Quality Rules and Regulations*, Chapter 2 for protection of stock and wildlife consumption. In addition, the permit establishes a chloride limit of 150 mg/l which is based on chronic aquatic life standards for class 2AB waters which are intended to protect for the above listed designated uses and reflect the application of the antidegradation provision for the protection of tier 2 water required under *Chapter 1 of the Wyoming Water Quality Rules and Regulations*. The permit establishes a total barium limit of 1800 µg/l and a total arsenic limit of 8.4 µg/l, both of which are based on Water Quality Criteria as established in *Wyoming Water Quality Rules and Regulations, Chapter 1*, for Human Health values. The permit also establishes a dissolved iron effluent limit of 1000 µg/l to be met at the end of pipe. The dissolved iron effluent limits is based upon chronic aquatic life protection for class 3B waters, and considers the antidegradation provisions for the protection of tier 2 water under *Chapter 1 of the Wyoming Water Quality Rules and Regulations*. Dissolved iron has been determined to be a non-persistent pollutant. This approach reflects current WYPDES permitting practice in regards to establishing dissolved iron effluent limits in CBM surface discharge permits.

**Monitoring Requirements:** Results are to be reported twice-yearly and if no discharge occurs at the outfall then "no discharge" is to be reported. The permit also requires that an initial monitoring of the effluent be conducted within the first 60 days of discharge and the results submitted to WDEQ and the U.S. Environmental Protection Agency within 120 days of the commencement of discharge.

**Additional Requirements**

The permit requires the permittee to install a staff gage within each option 1 containment unit at this facility. The staff gage must mark the elevation of the 50-year / 24-hour storm freeboard capacity within each containment unit. The permittee will be required to maintain effluent levels within each containment unit at or below that elevation. Should the volume of water within the reservoirs exceed the freeboard needed to contain runoff from a 50-year / 24-hour precipitation event, the permittee is required to cease discharge into these reservoirs until the volume of water within the reservoir drops back below the 50-year / 24-hour freeboard reserve.

Documentation submitted in support of this permit by the permittee was based upon water quality representative of water quality from the Anderson, Pawnee and Wall coal seams in the surrounding geographical area. Therefore, the permit requires that the produced water being discharged by this facility originate in the Anderson, Pawnee and Wall coal seams.

The permittee has indicated that the development of wells in this area will proceed in a phased manner such that the volume of discharge effluent never exceeds containment unit capacities.

There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the discharge cause formation of visible deposits of iron, hydrocarbons or any other constituent on the bottom or shoreline of the receiving water. In addition, erosion control measures will be implemented to prevent significant damage to or erosion of the receiving water channel at the point of discharge.

The discharge of wastewater and the effluent limits that are established in this permit have been reviewed to ensure that the levels of water quality necessary to protect the designated uses of the receiving waters are maintained and protected. An antidegradation review has been conducted and verifies that the permit conditions, including the effluent limitations established, provide a level of protection to the receiving water consistent with the antidegradation provisions of Wyoming surface water quality standards.

Self monitoring of effluent quality and quantity is required on a regular basis with reporting of results semiannually. The permit is scheduled to expire on February 28, 2014.

Becky Peters  
Water Quality Division  
Department of Environmental Quality  
Drafted: February 5, 2009

AUTHORIZATION TO DISCHARGE UNDER THE  
WYOMING POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, (hereinafter referred to as "the Act"), and the Wyoming Environmental Quality Act,

Pennaco Energy, Inc.

is authorized to discharge from the wastewater treatment facilities serving the

Crazy Woman – East Facility CBM Facility

located in

the SWNE of Section 2, the NENW of Section 11, the NESE of Section 10, the NWNW of Section 12, th NWNE of Section 14, Township 52 North, Range 77 West, and the SESW of Section 34, Township 53 North, Range 77 West all in Johnson County.

to receiving waters named

on-channel reservoirs (class 3B), located in unnamed ephemeral tributaries (class 3B) in the Powder River (class 2ABWW)

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II and III hereof.

This permit shall become effective on the date of signature by the Director of the Department of Environmental Quality.

This permit and the authorization to discharge shall expire February 28, 2014 at midnight .

  
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John F. Wagner  
Administrator, Water Quality

5/6/09  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
John V. Corra  
Director, Department of Environmental Quality

5/6/09  
\_\_\_\_\_  
Date

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effective immediately and lasting through February 28, 2014, the quality of effluent discharged by the permittee shall, at a minimum, meet the limitations set forth below. The permittee is authorized to discharge from outfall(s) serial numbers 001, 004, 005, 006, 007 and 008.

**1a. Discharges shall be limited as specified below for Option 1B discharges (001, 004, 005):**

<u>Effluent Limits</u>	
<u>Effluent Characteristic</u>	<u>Daily Maximum, Outfalls</u>
<b>Dissolved Iron, µg/l</b>	1000
<b>pH, standard units</b>	6.5 – 9.0
<b>Specific Conductance, micromhos/cm</b>	7500
<b>Chlorides, mg/l</b>	2000

Note: 1) 'Dissolved' value for metals refers to the amount that will pass through a 0.45 µm membrane filter prior to acidification to 1.5-2.0 with Nitric Acid.

This permit prohibits discharge of effluent from the reservoirs except in the event of a 50-year / 24-hour storm event (ref. *"Isoplethials of 50-yr / 24-hr precipitation map," NOAA Atlas II, Volume II*) or greater. If a reservoir overtopping event occurs, verification of storm magnitude will be the responsibility of the permittee. Discharge from reservoir(s) resulting from a 50-year/24 hour storm event or greater is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. Additional release from reservoir(s) is not authorized.

The permit requires the permittee to install a staff gage within each option 1 containment unit at this facility. The staff gage must mark the elevation of the 50-year / 24-hour storm freeboard capacity within each containment unit. The permittee will be required to maintain effluent levels within each containment unit at or below that elevation. Should the volume of water within the reservoirs exceed the freeboard needed to contain runoff from a 50 year/24 hour precipitation event, the permittee is required to cease discharge into these reservoirs until the volume of water within the reservoir drops back below the 50 year/24 hour freeboard reserve.

For the duration of the permit, at a minimum, the permittee is required to monitor for flow at the flow monitoring station locations as described in Table 1 (Part I.B.12) of the permit on a daily basis. If any effluent discharged from this facility does reach a downstream flow monitoring point (FM1, FM4 and FM5) except in the event of a 50-year/24-hour storm event or greater, this permit requires the permittee to cease all discharge of effluent from the contributing wells until the effluent is no longer reaching the flow monitoring point(s).

**1b. Discharges shall be limited as specified below for Option 2 discharges (006, 007 and 008):**

Effluent Limits	
Effluent Constituent	Daily Maximum, Each Outfall
Chlorides, mg/l	150
Dissolved Iron, µg/l	1,000
pH, standard units	6.5 – 9.0
Specific Conductance, micromhos/cm	7,500
Total Recoverable Arsenic, µg/l	8.4
Total Recoverable Barium, µg/l	1800

Note: 1) 'Dissolved' value for metals refers to the amount that will pass through a 0.45 µm membrane filter prior to acidification to 1.5-2.0 with Nitric Acid.  
2) 'Total' value for metals refers to the total recoverable amount of that metal in the water column.

The permittee is required to contain all effluent from the outfalls in the on-channel reservoir(s) at this facility, unless prior written authorization is granted by the WYPDES program for a reservoir release, in association with use of assimilative capacity credits for the Powder River Basin. In the event that such an authorization for release is granted for this facility, the authorization letter will specify the release volume, duration and individual reservoir(s) covered. In the absence of such written authorization for release, the following containment requirements will apply at the reservoir(s): The permittee will be required to contain all produced water within the reservoir(s) during "dry" operating conditions, and discharge of effluent from the reservoir(s), except during periods of time in which natural precipitation causes the reservoir(s) to overtop and spill, is prohibited. Intentional or draw-down type releases from the reservoir(s) will constitute a violation of this permit. Discharge from the reservoir(s) is limited by the permit to natural overtopping and shall not extend beyond a 48 hour period following commencement of natural overtopping. It is the responsibility of the permittee to adequately demonstrate the circumstances in which reservoir discharges occurred, if requested to do so by the WYPDES Program.

**1c. Such discharges shall be limited as specified below for all permitted outfalls:**

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units in any single grab sample.

This permit requires that the produced water being discharged by this facility originate in the Anderson, Pawnee and Wall coal seams. The permittee is authorized to discharge from all wells to all permitted outfalls, provided all effluent limits can be met.

Discharges from the outfall(s) shall occur in a manner to prevent erosion, scouring, or damage to stream banks, stream beds, ditches, or other waters of the state at the point of discharge. In addition, there shall be no deposition of substances in quantities which could result in significant aesthetic degradation, or degradation of habitat for aquatic life,

plant life or wildlife; or which could adversely affect public water supplies or those intended for agricultural or industrial use.

Information gathered from the water quality monitoring stations may result in modification of the permit to protect existing uses on the tributary and the mainstem.

There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the discharge cause formation of a visible sheen or visible hydrocarbon deposits on the bottom or shoreline of the receiving water.

2. Discharges shall be monitored by the permittee as specified below:

**a. Monitoring of the initial discharge**

*If outfalls have already been sampled and analyzed for initial monitoring constituents, the permittee is not required to re-sample and re-analyze the outfalls if results have been obtained for all the constituents listed below and reported to the WDEQ.*

Within 60 days of commencement of discharge, a sample shall be collected from each outfall and analyzed for all the constituents specified below, at the required detection limits. Within 120 days of commencement of discharge, a summary report on the produced water must be submitted to the Wyoming Department of Environmental Quality and the U.S. EPA Region 8 at the addresses listed below. This summary report must include the results and detection limits for each of the constituents listed below. In addition, the report must include written notification of the established location of the discharge point (refer to Part I.B.11). This notification must include a confirmation that the location of the established discharge point(s) is within 1,510 feet of the location of the identified discharge point(s), is within the same drainage, and discharges to the same landowner's property as identified on the original application form. The legal description and location in decimal degrees of the established discharge point(s) must also be provided. After receiving the monitoring results for the initial discharge, the effluent limits and monitoring requirements established in this permit may be modified.

<b>Parameter* (See notes following the table on chemical states)</b>	<b>Required Detection Limits and Required Units</b>
Alkalinity, Total	1 mg/l as CaCO <sub>3</sub>
Aluminum, Dissolved	50 µg/l
Arsenic, Total Recoverable	1 µg/l
Barium, Total Recoverable	100 µg/l
Bicarbonate	10 mg/l
Cadmium, Dissolved	5 µg/l
Calcium, Dissolved	50 µg/l, report as mg/l
Chloride	5 mg/l
Copper, Dissolved	10 µg/l
Dissolved Solids, Total	5 mg/l
Fluoride, Dissolved	100 µg/l
Hardness, Total	10 mg/l as CaCO <sub>3</sub>

Parameter* (See notes following the table on chemical states)	<u>Required Detection Limits and Required Units</u>
Iron, Dissolved	50 µg/l
Lead, Dissolved	2 µg/l
Magnesium, Dissolved	100 µg/l, report as mg/l
Manganese, Dissolved	50 µg/l
Mercury, Dissolved	1 µg/l
pH	to 0.1 pH unit
Radium 226, Total Recoverable	0.2 pCi/l
Selenium, Total Recoverable	5 µg/l
Sodium Adsorption Ratio	Calculated as unadjusted ratio
Sodium, Dissolved	100 µg/l, report as mg/l
Specific Conductance	5 micromhos/cm
Sulfate	10 mg/l
Zinc, Dissolved	50 µg/l

**TOTAL:** Value is expressed in terms of total recoverable metal in the water column.

**NOTE:** Except for aquatic life values for metals and where otherwise indicated, the values given refer to the total recoverable (dissolved plus suspended) amount for each substance. For the aquatic life values for metals, the values refer to the dissolved amount.

**DISSOLVED:** Value is based on the dissolved amount which is the amount that will pass through a 0.45 µm membrane filter prior to acidification to pH 1.5 - 2.0 with nitric acid.

Initial monitoring reports are to be sent to the following addresses:

**Planning and Targeting Program, 8ENF-PT  
Office of Enforcement, Compliance, and Environmental Justice  
U.S. EPA Region 8  
1595 Wynkoop Street  
Denver, CO 80202-1129**

and

**Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building, 4 West  
122 West 25th Street  
Cheyenne, WY 82002**

**b. Routine monitoring End of Pipe –Option 1B discharges, outfalls 001, 004, 005**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies. The first routine monitoring for the time frame during which the monitoring of initial discharge occurs will, at a minimum, consist of flow measurements for the duration of the six-month monitoring time frame. Monitoring will be based on semi-annual time frames, from January through June, and

from July through December.

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Total Flow (MGD)	Monthly	Continuous
Dissolved Iron (µg/l)	Annually	Grab
pH (standard units)	Once Every Six Months	Grab
Total Dissolved Solids (mg/l)	Annually	Grab
Specific Conductance (micromhos/cm)	Once Every Six Months	Grab
Chloride (mg/l)	Annually	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): At the outfall of the final treatment unit which is located out of the natural drainage and prior to admixture with diluent waters.

**c. Routine monitoring End of Pipe – Option 2 discharges, outfalls 006, 007 and 008**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies. The first routine monitoring for the time frame during which the monitoring of initial discharge occurs will, at a minimum, consist of flow measurements for the duration of the six-month monitoring time frame. Reporting will be based on semi-annual time frames, from January through June, and from July through December.

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Bicarbonate (mg/l)	Annually	Grab
Dissolved Calcium (mg/l)	Monthly	Grab
Chloride (mg/l)	Annually	Grab
Dissolved Iron (µg/l)	Annually	Grab
Dissolved Magnesium (mg/l)	Monthly	Grab
pH (standard units)	Once Every Six Months	Grab
Dissolved Sodium (mg/l)	Monthly	Grab
Sodium Adsorption Ratio (unadjusted)	Monthly	Calculated
Specific Conductance (micromhos/cm)	Monthly	Grab
Total Alkalinity (mg/l)	Annually	Grab

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Total Recoverable Arsenic (µg/l)	Annually	Grab
Total Recoverable Barium (µg/l)	Annually	Grab
Total Flow - (MGD)	Monthly	Continuous
Total Dissolved Solids (mg/l)	Annually	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): At the outfall of the final treatment unit which is located out of the natural drainage and prior to admixture with diluent waters.

**d. Routine Monitoring Within Option 1B Containment Units: CU1, CU4, CU5**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies. Monitoring and reporting will be based on an annual time frame.

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Total Dissolved Solids (mg/l)	Annually	Grab
Specific Conductance (µmhos/cm)	Annually	Grab
Chlorides (mg/l)	Annually	Grab
Total Recoverable Selenium (µg/l)	Annually	Grab
Sulfate (mg/l)	Annually	Grab
Dissolved Fluoride (µg/l)	Annually	Grab
pH (standard units)	Annually	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): within the individual containment units, outside of the mixing zone of the outfall and the containment unit, at least 50 feet from the location that the discharge enters the containment unit. See Part I.B.12 of the permit for additional information regarding containment unit locations.

**e. Water Quality Monitoring Stations (TRIB1, TRIB2, TRIB3, TRIB4, UPR and DPR)**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies. Monitoring will be based on monthly time frames, and reported semiannually.

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Dissolved Calcium (mg/l)	Monthly	Grab
Dissolved Magnesium (mg/l)	Monthly	Grab

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Dissolved Sodium (mg/l)	Monthly	Grab
Sodium Adsorption Ratio (calculated as unadjusted ratio)	Monthly	Calculated
Specific Conductance (micromhos/cm)	Monthly	Grab
Flow* (MGD)	Monthly	Instantaneous

\*The permittee is only required to monitor and report flow at the tributary monitoring stations (TRIB1, TRIB2, TRIB3, TRIB4). The permittee is not required to monitor or report flow data at the mainstem water quality monitoring stations (UPR and DPR), see Table 1, Part I.B.13 of the permit below for water quality monitoring station location descriptions.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: designated water quality monitoring stations identified as TRIB1, TRIB2, TRIB3, TRIB4, UPR, and DPR in Table 1, Part I.B.13. Established water quality monitoring stations on the mainstem are to be located outside the mixing zone with the tributary and the mainstem. Monthly water quality samples are to be collected at all water quality monitoring stations when effluent from this CBM facility reaches the TRIB1, TRIB2, TRIB3 and TRIB4 stations. If flow occurs at the TRIB1, TRIB2, TRIB3 and TRIB4 stations during a given monthly monitoring period, but this CBM facility did not contribute to that flow, the permittee will report "did not contribute" in the discharge monitoring reports for that monthly monitoring period. Under such circumstances, sampling is not required at the water quality monitoring stations, and it will be the responsibility of the permittee to demonstrate that the effluent from this facility did not contribute to the flow occurring at the TRIB1, TRIB2, TRIB3 and TRIB4 stations. If no flow at all occurs at the TRIB1, TRIB2, TRIB3 and TRIB4 stations for an entire monthly monitoring period, then "no flow" is to be reported and samples need not be collected at the four water quality monitoring stations for that monthly monitoring period.

At the designated water quality monitoring stations, monitoring will be required for calcium, magnesium, sodium, sodium adsorption ratio and specific conductance. Information gathered from the water quality monitoring stations may result in modification of the permit to protect existing uses on the tributary and mainstem.

**B. MONITORING AND REPORTING**

**1. Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and approval by, the permit issuing authority.

2. Reporting

Results of initial monitoring, including the date the discharge began, shall be summarized on a Monitoring Report Form for Monitoring of Initial Discharge and submitted to the state water pollution control agency at the address below postmarked no later than 120 days after the commencement of discharge.

Results of routine end of pipe monitoring during the previous six (6) months shall be summarized and reported semiannually on a Discharge Monitoring Report Form (DMR). If the discharge is intermittent, the date the discharge began and ended must be included. The information submitted on the first semiannual DMR shall contain a summary of flow measurements and any additional monitoring conducted subsequent to the submittal of the initial monitoring report. When required, whole effluent toxicity (biomonitoring) results must be reported on the most recent version of EPA Region VIII's Guidance for Whole Effluent Reporting. Monitoring reports must be submitted to the state water pollution control agency at the following address postmarked no later than the 15th day of the second month following the completed reporting period. The first monitoring report following issuance of this permit renewal is due August 15, 2009.

Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements contained in Part II.A.11.

Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building, 4 West  
122 West 25th Street  
Cheyenne, WY 82002  
Telephone: (307) 777-7781

If no discharge occurs during the reporting period, "no discharge" shall be reported. If discharge is intermittent during the reporting period, sampling shall be done while the facility is discharging.

3. Definitions

- a. The "monthly average" shall be determined by calculating the arithmetic mean (geometric mean in the case of fecal coliform) of all composite and/or grab samples collected during a calendar month.
- b. The "weekly average" shall be determined by calculating the arithmetic mean (geometric mean in the case of fecal coliform) of all composite and/or grab samples collected during any week.
- c. The "daily maximum" shall be determined by the analysis of a single grab or composite sample.
- d. "MGD", for monitoring requirements, is defined as million gallons per day.

- e. "Net" value, if noted under Effluent Characteristics, is calculated on the basis of the net increase of the individual parameter over the quantity of that same parameter present in the intake water measured prior to any contamination or use in the process of this facility. Any contaminants contained in any intake water obtained from underground wells shall not be adjusted for as described above and, therefore, shall be considered as process input to the final effluent. Limitations in which "net" is not noted are calculated on the basis of gross measurements of each parameter in the discharge, irrespective of the quantity of those parameters in the intake waters.
- f. A "composite" sample, for monitoring requirements, is defined as a minimum of four grab samples collected at equally spaced two hour intervals and proportioned according to flow.
- g. An "instantaneous" measurement for monitoring requirements is defined as a single reading, measurement, or observation.
- h. A "pollutant" is any substance or substances which, if allowed to enter surface waters of the state, causes or threatens to cause pollution as defined in the Wyoming Environmental Quality Act, Section 35-11-103.
- i. "Total Flow" is the total volume of water discharged, measured on a continuous basis and reported as a total volume for each month during a reporting period. The accuracy of flow measurement must comply with Part III.A.1.

4. Test Procedures

Test procedures for the analysis of pollutants, collection of samples, sample containers, sample preservation, and holding times, shall conform to regulations published pursuant to 40 CFR, Part 136, unless other test procedures have been specified in this permit.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date and time of sampling;
- b. The dates and times the analyses were performed;
- c. The person(s) who performed the analyses and collected the samples;
- d. The analytical techniques or methods used; and
- e. The results of all required analyses including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine the results.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified

above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

7. Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the administrator at any time. Data collected on site, copies of Discharge Monitoring Reports and a copy of this WYPDES permit must be maintained on site during the duration of activity at the permitted location.

8. Penalties for Tampering

The Act provides that any person who falsifies, tampers with or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two years per violation, or both.

9. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

10. Facility Identification

All facilities discharging produced water shall be clearly identified with an all-weather sign posted at each outfall, and at the outlet of each receiving reservoir listed in Table 1 below. This sign shall, at a minimum, convey the following information:

- a. The name of the company, corporation, person(s) who holds the discharge permit, and the WYPDES permit number;
- b. The contact name and phone number of the person responsible for the records associated with the permit;
- c. The name of the facility (as identified in this WYPDES permit). In addition, all outfall signs will include the outfall number. Reservoir signs are separate from the outfall signs, and are to be located at the outlet of the reservoir. Reservoir signs must include the information listed in items a and b above, in addition to the reservoir name, as identified in Table 1 below.

11. Identification and Establishment of Discharge Points

According to 40 CFR 122.21(k)(1), the permittee shall identify the expected location of each discharge point on the appropriate WYPDES permit application form. The location

