

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: East Kuhn – Meadow Draw, which is located in the NWSW, SESW of Section 6, the SWNW, NWNW of Section 7, Township 53 North, Range 76 West; in the NESE, NENW, SWNW, SWSW, SWNE, SENE of Section 1, the NESE, SWSE of Section 2, the NESE of Section 11, the NESW of Section 11, the SWNW, SWNE, NESE of Section 12, the SENW, NENE, SWNE, NWSW, NWSE of Section 13, the NWNE and NESE of Section 23, the NENW, NWNW and NWSW of Section 24, and the SWNW of Section 25, Township 53 North, Range 77 West, all in Johnson County. The produced water will be discharged to Powder River (class 2ABWW) via Mickelberry Creek (class 3B) and/or various unnamed ephemeral tributaries (all class 3B), via thirty-one on-channel reservoirs (all class 3B). The permit requires that the produced water being discharged from this facility originate in the Anderson and/or Wall coal seams.

NUMBER: **WY0047554**

This permit has been modified from the draft originally advertised in the May 15, 2009 public notice. Typographical errors have been corrected in Table 1 and Part I, of the following permit, as verified by Pennaco Energy Inc.

This permit has been renewed in accordance with all current WYPDES regulations and permitting approaches and requirements. In addition, the permittee has requested that the following modifications be made to permit WY0047554 during the renewal process:

- 1. Outfalls 018-032 and associated reservoirs have been added to this permit, as shown in Table 1 of this permit.*
- 2. Outfall 002 and associated reservoir have been removed from this permit.*
- 3. This permit consolidates permit WY0047554 with WY0047546 and WY0047538. Upon issuance of the renewal permit, WYPDES permits WY0047546 and WY0047538 will be terminated.*
- 4. The required routine monitoring frequencies for chloride, alkalinity and bicarbonate are updated to annual.*
- 5. The effluent limit for total recoverable arsenic is updated from 7 µg/l to 8.4 µg/l in accordance with current WDEQ regulations.*
- 6. Monitoring requirements for total recoverable aluminum have been changed to monitoring requirement for dissolved aluminum.*

General Facility Description

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 federal and 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: Option 2 with reservoirs outfalls 001, 005, 015, 020, and 024-027

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 on-channel reservoirs 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 reservoirs: the permittee will be required to contain all produced water within the on-channel reservoirs during “dry” operating conditions. This permit prohibits discharge of effluent from the reservoirs except during periods of time in which natural precipitation causes the reservoirs to overtop and spill. Intentional or draw-down type releases from the reservoirs will constitute a violation of this permit. Discharge from the reservoirs 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 reservoirs discharges occurred, if requested to do so by the WYPDES Program.

Effluent Limits for Option 2 with reservoirs outfalls 001, 005, 015, 020, and 024-027:

Technology Limits:

The EPA Effluent Guidelines and Standards for Oil and Gas Extraction Point Source Category (Part 435, Subpart E) predate the development of coal bed methane extraction technology; however the technology is similar enough to conventional gas extraction that, in the professional judgment of the WDEQ, this effluent limit guideline is appropriately applied to coal bed methane gas production. In addition to the federal effluent limitation guideline, Chapter 2, Appendix H of the Wyoming Water Quality Rules and Regulations contains the following limits applicable to coal bed methane discharges:

Chlorides	2,000 mg/l
Sulfates	3,000 mg/l
Total Dissolved Solids	5,000 mg/l
Specific Conductance	7,500 micromhos/cm
pH	6.5 – 9.0 standard units

Water Quality Based 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. In addition, the permit establishes a total recoverable barium limit of 1800 µg/l, a chloride limit of 150 mg/l, and a total recoverable arsenic limit of 8.4 µg/l. These limits are based on chronic aquatic life and human health standards for class 2AB waters which are intended to protect for the above listed designated uses and reflect the application of the antidegradation provisions for the protection of tier 2 waters required under *Chapter 1 of the Wyoming Water Quality Rules and Regulations*. The permit also establishes a dissolved iron effluent limit of 300 µg/l and a radium 226+228 limit of 1 pCi/l, to be met at the end of pipe. Because WDEQ has determined through review of past CBM discharge data that sulfates occur in the effluent at concentrations well below the Chapter 2 limit of 3,000 mg/l, the permit does not include an effluent limit for sulfates.

All limits described in this section are intended to protect for the above listed designated uses, on both the immediate receiving water and the perennial mainstem, and apply at the end of pipe.

Reporting and Initial Monitoring for Outfalls 001, 005, 015, 020, and 024-027:

Results are to be reported twice-yearly and if no discharge occurs 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.

Outfall Description: Option 1B with reservoirs outfalls 003, 004, 006-012, 014, 017-019, 021-023, and 029-031

The permittee has chosen option 1B of the coal bed methane permitting options. Under this permitting option, the produced water is discharged to and contained within a class 3 surface water impoundment. This permit prohibits discharge to the nearest class 2 water (Powder River). This permit authorizes discharge of CBM effluent into headwater on-channel reservoirs. Flow monitoring stations (FM1-FM19), located below the on-channel headwater reservoirs proposed for containment of CBM produced waters, have been established to ensure that effluent from the reservoirs does not flow downstream except in the event of a 50-year/24-hour storm event or greater. 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. Neither the reservoir nor its spillways will constitute regulated discharge points under this permit.

Effluent Limits for Option 1B outfalls 003, 004, 006-012, 014, 017-019, 021-023, and 029-031:

The permit establishes the following 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 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 for all permitted outfalls. 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, and reflects the application of Tier 1 antidegradation protection under *Chapter 1 of the Wyoming Water Quality Rules and Regulations*.

The reservoir being utilized for containment of the CBM produced water at this facility was 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 (ref. "Isopluvials of 50-yr / 24-hr precipitation map," *NOAA Atlas II, Volume II*). Should the volume of water within the reservoir 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 the reservoir until the volume of water within the reservoir drops back below the 50 year/24 hour freeboard reserve.

Monitoring Requirements for Option 1B outfalls 003, 004, 006-012, 014, 017-019, 021-023, and 029-031

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.

In order to monitor potential accumulation of pollutants within the receiving reservoirs, this permit (Part I.A.2.c) requires routine sampling, analysis, and reporting for the following constituents within the reservoir: pH, total dissolved solids, specific conductance, chlorides, sulfates, dissolved fluoride, and total recoverable selenium. Sampling for these constituents within the reservoir is to occur a minimum of 50 feet from the location where the CBM effluent enters the reservoir. The reservoir monitoring location has been identified in Table 1, Part I.B.12 of the permit below as "CU3-CU4, CU6-CU12, CU14, CU17-CU19, CU21-CU23, and CU29-CU31". This monitoring requirement is intended to aid in the protection of the uses associated with the class 3B on-channel reservoirs (aquatic life other than fish, recreation, livestock watering, wildlife, industry and scenic value). If monitoring of the effluent within the reservoirs reveals an exceedance of any applicable standards for class 3B waters, then this permit may be modified in order to protect all uses of the receiving water bodies.

This permit requires daily monitoring year-round at the flow monitoring station located immediately downstream of the reservoir in order to determine if any effluent from this facility is reaching the established flow monitoring station(s) (FM1-FM19). 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 or greater. If a reservoir overtopping event occurs, verification of storm magnitude will be the responsibility of the permittee. Discharge from the reservoir 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 is not authorized. If any effluent discharged from this facility does reach a flow monitoring station (FM1-FM19), 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 an established flow monitoring station, 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.

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.

Outfall Description: Option 1A with reservoirs outfalls 013, 016, 028, and 032

The permittee has chosen option 1A of the coal bed methane permitting options. Under this permitting option, the produced water is immediately discharged to confined, off channel pits, stock ponds or other man made containment units (class 4C water) that will not flow into any other waters of the state. The permittee has demonstrated through a water balance study that, considering CBM well inflow, natural precipitation, evaporation and infiltration, the off channel containment unit(s) associated with this facility will be adequate to contain all CBM

discharge water and stormwater up to a 50 year 24 hour event (*ref. "Isopluvials of 50-yr / 24-hr precipitation map," NOAA Atlas II, Volume II*). The permittee has committed to the complete containment of all discharged water within the containment units. The permit establishes effluent limits for the end of pipe, which are protective of recreation, agriculture, industry, scenic value, and livestock and wildlife watering.

Effluent Limits for Option 1A outfalls 013, 016, 028, and 032

The permit establishes the following effluent limits. Permit effluent limits are based on 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. Effluent limits for chlorides (2,000 mg/l) and specific conductance (7,500 micromhos/cm) are included to protect for livestock and wildlife watering. These limits are based upon *Wyoming Water Quality Rules and Regulations, Chapters 1 and 2* and apply to discharge from any permitted outfall. Based upon the results of the initial monitoring, this permit may be reopened and more stringent limits and/or monitoring and reporting required.

Monitoring Requirements for Option 1A outfalls 013, 016, 028, and 032

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.

In order to monitor effluent contained within the off-channel, man-made containment units to ensure that the effluent does not exceed water quality standards for livestock and wildlife watering as the result of concentration due to evaporation, the permittee is required to monitor the effluent contained within the pits associated with this facility and report the results to the WDEQ on an annual basis. Sampling within the containment units is to occur a minimum of 50 feet from the location where the CBM effluent enters the containment units. The containment unit monitoring location has been identified in Table 1, Part I.B.12 of the permit below as "CU13, CU16, CU28, and CU32". This monitoring requirement is intended to aid in the protection of the uses associated with the class 4 off-channel reservoirs (recreation, livestock watering, wildlife, industry and scenic value). If monitoring of the effluent within the containment unit reveals an exceedance of any applicable standards for class 4 waters, then this permit may be modified in order to protect all uses of the receiving water bodies.

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.

Other Permit Requirements for all outfalls

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

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 June 30, 2013. This expiration date was determined through review of the watershed permitting schedule which the WDEQ is implementing in order to synchronize the permitting and expiration of facilities within the same watershed. This holistic approach will provide for more efficient permitting of point-source discharges.

Carrie Ferguson - Renewal
Water Quality Division
Department of Environmental Quality
Drafted: May 4, 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

East Kuhn – Meadow Draw

which is located in the

NWSW, SESW of Section 6, the SWNW, NWNW of Section 7, Township 53 North, Range 76 West; in the NESE, NENW, SWNW, SWSW, SWNE, SENE of Section 1, the NESE, SWSE of Section 2, the NESE of Section 11, the NESW of Section 11, the SWNW, SWNE, NESE of Section 12, the SENW, NENE, SWNE, NWSW, NWSE of Section 13, the NWNE and NESE of Section 23, the NENW, NWNW and NWSW of Section 24, and the SWNW of Section 25, Township 53 North, Range 77 West, all in Johnson County,

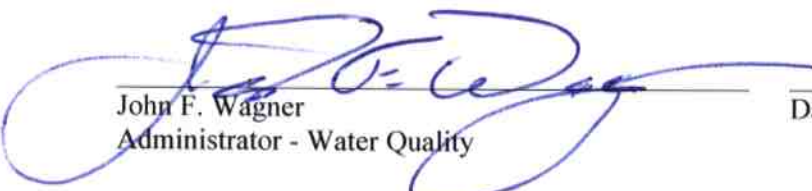
to receiving waters named

Powder River (class 2ABWW) via Mickelberry Creek (class 3B) and/or various unnamed ephemeral tributaries (all class 3B), via thirty-one on-channel reservoirs (all class 3B),

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

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

This renewal permit and the authorization to discharge shall expire June 30, 2013, at midnight.



John F. Wagner
Administrator - Water Quality

Date

6/26/09



John V. Corra
Director - Department of Environmental Quality

Date

6/26/09

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effective **immediately** and lasting through June 30, 2013, 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 outfalls numbers 001, 003-032.

- Discharges from Option 2 with reservoir outfalls 001, 005, 015, 020, and 024-027 shall be limited as specified below:**

<u>Effluent Characteristic</u>	<u>Daily Maximum, Outfalls</u>
Chlorides, mg/l	150
pH, standard units	6.5 – 9.0
Specific Conductance, micromhos/cm	7500
Total Recoverable Arsenic, µg/l	8.4
Total Recoverable Barium, µg/l	1800
Total Recoverable Radium 226+228, pCi/l	1
Dissolved Iron, µg/l	300

- Note:
- '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.
 - 'Total' value for metals refers to the total recoverable amount of that metal in the water column.

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

The permittee is required to contain all effluent from the outfalls in on-channel reservoirs 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 reservoirs: the permittee will be required to contain all produced water within the on-channel reservoirs during “dry” operating conditions. This permit prohibits discharge of effluent from the reservoirs except during periods of time in which natural precipitation causes the reservoirs to overtop and spill. Intentional or draw-down type releases from the reservoirs will constitute a violation of this permit. Discharge from the reservoirs 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 reservoirs discharges occurred, if requested to do so by the WYPDES Program.

Information gathered from the water quality monitoring stations may result in modification of the permit, in accordance with Part III.A.3 of the permit below, 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.

All waters shall be discharged 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.

The produced water will originate from the Anderson and/or Wall coal seams. The permittee is authorized to discharge from all wells to all permitted outfalls, provided all effluent limits and other permit conditions can be met.

2. Discharges from Option 1B outfalls 003, 004, 006, 007-012, 014, 017-019, 021-023, and 029-031 shall be limited as specified below:

<u>Effluent Characteristic</u>	<u>Daily Maximum, Outfalls</u>
Dissolved Iron, µg/l	1000
pH, standard units	6.5 – 9.0
Specific Conductance, micromhos/cm	7500
Chlorides, mg/l	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 on-channel reservoir associated with this facility except in the event of a 50-year / 24-hour storm event (*ref. "Isopluvials 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.

If any effluent discharged from this facility does reach a flow monitoring station (FM2-FM4, FM6), 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 an

established flow monitoring station, 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.

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.

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

The permittee may discharge effluent from any authorized well to any permitted outfall, as long as all permit limits and requirements can be met. The produced water being discharged at this facility must originate from the Anderson and/or Wall coal seams.

All waters shall be discharged 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.

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.

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.

3. Discharges from Option 1A outfalls 013, 016, 028, and 032 shall be limited as specified below:

<u>Effluent Constituent</u>	<u>Daily Maximum</u>
Chlorides, mg/l	2000
pH, standard units	6.5 – 9.0
Specific Conductance, micromhos/cm	7500

Intentional discharge from the off-channel containment units being utilized for produced water containment at this facility is prohibited. Discharge from the off-channel containment units is not allowed except during those periods of time that a precipitation event equal to or greater than a 50 year, 24 hour storm event (*ref. "Isopluvials of 50-yr / 24-hr precipitation map," NOAA Atlas II, Volume II*) causes the reservoirs to fill and overtop, and discharges under such circumstances will be limited to natural overtopping only. In the event of discharge from the containment units, it shall be the permittee's responsibility to demonstrate whether or not the discharge was related to a 50 year, 24 hour storm event. Discharges from the containment units not directly related to a 50 year, 24 hour storm event will be considered a violation of this permit.

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.

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

The permittee may discharge effluent from any authorized well to any permitted outfall, as long as all permit limits and requirements can be met. The produced water being discharged at this facility must originate from the Anderson and/or Wall coal seams.

All waters shall be discharged 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.

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.

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.

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

a. Monitoring of the initial discharge

Note: The initial monitoring requirement outlined below will not apply to outfalls already sampled for these parameters under previous permit coverage.

Within 60 days of commencement of discharge following issuance of this permit, a sample shall be collected from each outfall and analyzed for 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.

<u>Parameter*</u> (See notes following the table on chemical states)	<u>Required Detection Limits and Required Units</u>
Alkalinity, Total	1 mg/l as CaCO ₃
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
Chlorides	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 ₃
Iron, Dissolved	50 µg/l
Lead, Dissolved	2 µg/l
Magnesium, Dissolved	100 µg/l, report as mg/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
Sulfates	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 – (001, 003-032)

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.

Parameter	Measurement Frequency	Sample Type
Bicarbonate (mg/l)	Annually	Grab
Dissolved Calcium (mg/l)	Annually	Grab
Chloride (mg/l)	Annually	Grab
Dissolved Fluoride (µg/l)	Annually	Grab
Dissolved Iron (µg/l)	Quarterly	Grab
Dissolved Magnesium (mg/l)	Annually	Grab
pH (standard units)	Annually	Grab
Total Recoverable Radium 226 (pCi/l)	Annually	Grab
Total Recoverable Radium 228 (pCi/l)	Annually	Grab
Dissolved Sodium (mg/l)	Annually	Grab
Sodium Adsorption Ratio (unitless)	Annually	Calculated
Specific Conductance (micromhos/cm)	Annually	Grab
Total Dissolved Solids (mg/l)	Annually	Grab
Total Recoverable Arsenic (µg/l)	Annually	Grab
Total Recoverable Barium (µg/l)	Annually	Grab
Total Flow – (MGD)	Annually	Continuous

c. Water Quality Monitoring Station (TRIB1-TRIB4, UPR, 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.

Parameter	Measurement Frequency	Sample Type
Flow – (cfs)	Monthly	Continuous

Dissolved Sodium (mg/l)	Monthly	Grab
Dissolved Calcium (mg/l)	Monthly	Grab
Dissolved Magnesium (mg/l)	Monthly	Grab
Specific Conductance, micromhos/cm	Monthly	Grab
Bicarbonate (mg/l)	Monthly	Grab
Sodium Adsorption Ratio (calculated as unadjusted for bicarbonate ratio)	Monthly	Grab
pH (standard units)	Monthly	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: TRIB1-TRIB4, UPR, DPR listed in Table 1, Part I.B. 13 of the permit below. Effluent samples at the designated water quality monitoring stations must be collected on a monthly basis and are to be reported semiannually.

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.

d. Routine Monitoring Within Reservoirs— CU3-CU4, CU6- CU14, CU16-CU19, CU21-CU23, CU28-CU32

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): designated reservoir monitoring stations are located within each receiving reservoir as described in Table 1, Part I.B.12 of the permit below (CU3-CU4, CU6-CU14, CU16-CU19, CU21-CU23, CU28-CU32). In each reservoir, monitoring locations are to be located a minimum of 50 feet away from the point where CBM effluent enters the reservoir(s). Reservoir sampling will only apply to reservoirs that are receiving CBM

effluent or have received CBM effluent in the past. Results are to be reported annually and if a particular reservoir has not yet received any CBM effluent from this facility, then "no discharge" is to be reported for that reservoir monitoring station in the discharge monitoring report.

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, irrigation monitoring point, and water quality station 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 report following the issuance of this permit is due on February 15, 2010.

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 of the discharge point must be identified to within an accuracy of 15 seconds. This equates to a distance of 1,510 feet.

Public notice is not required if the location of the established discharge point is within 1,510 feet of the location of the discharge point originally identified on the permit application. In addition, the discharge must be within the same drainage and must discharge to the same landowner's property as identified on the original application form. If the three previously stated requirements are not satisfied, modification of the discharge point location(s) constitutes a major modification of the permit as defined in Part I.B.12. The permittee shall provide written notification of the establishment of each discharge point in accordance with Part I.A.2.a above.

12. Location of Discharge Points and Irrigation Monitoring Points

As of the date of permit issuance, authorized points of discharge were as follows:

SEE TABLE 1 FOR A LIST OF OUTFALL LOCATIONS

13. Location of water quality monitoring stations

As of the date of issuance, authorized water quality monitoring stations were as follows:

SEE TABLE 1 FOR A LIST OF WATER QUALITY STATIONS

Table 1: WY0047554 East Kuhn-Meadow Draw

Out-fall	Qtr/Qtr	SECTION	TWP (N)	RNG (W)	LATITUDE	LONGITUDE	Drainage / Description	Groundwater approval required prior to Discharge?	Reservoir Bond to WDEQ Required prior to Discharge?
*001	NESE	1	53	77	44.59729	-106.06256	Powder River (2ABWW) via an unnamed ephemeral tributary (3B) via an on-channel reservoir "Lenny" (3B)	NO	YES
*003	NENW	1	53	77	44.60375	-106.07241	Off-channel pit "Jeff #1" (4C)	NO	NO
*004	SWNW	1	53	77	44.59942	-106.07811	Off-channel pit "Jeff #2" (4C)	NO	NO
*005	NWSW	6	53	76	44.59650	-106.05769	Powder River (2ABWW) via an unnamed ephemeral tributary (3B) via an on-channel reservoir "Jesselyn" (3B)	NO	NO
*006	NESE	2	53	77	44.59679	-106.08479	Off-channel pit "Jeff #3" (4C)	NO	NO
*007	SWSE	2	53	77	44.59277	-106.08767	Off-channel pit "Jeff #4" (4C)	NO	NO
008	SWSW	1	53	77	44.59304	-106.07891	Off-channel pit "Sorenson #1" (4C)	NO	NO

Out-fall	Qtr/Qtr	SECTION	TWP (N)	RNG (W)	LATITUDE	LONGITUDE	Drainage / Description	Groundwater approval required prior to Discharge?	Reservoir Bond to WDEQ Required prior to Discharge?
*009	SWNW	7	53	76	44.58768	-106.05603	Off-channel pit "Donald" (4C)	NO	NO
*010	SWNW	12	53	77	44.58617	-106.07811	Off-channel pit "Rye" (4C)	NO	NO
011	SWNE	1	53	77	44.59944	-106.07056	Off-channel pit "PEK-1" (4C)	YES	YES
012	SWNE	1	53	77	44.60215	-106.06848	Off-channel pit "PEK-2" (4C)	YES	YES
013	SENE	1	53	77	44.60222	-106.06651	Off-channel pit "PEK-3" (4C)	YES	YES
014	NWSW	6	53	76	44.59636	-106.05682	Off-channel pit "PEK-4" (4C)	YES	YES
015	SWNE	12	53	77	44.58808	-106.06934	Powder River (2ABWW) via an unnamed ephemeral tributary (3B) via an on-channel reservoir "PSK-1" (3B)	YES	YES
016	NWNW	7	53	76	44.58989	-106.05931	Off-channel pit "PSK-2" (4C)	YES	YES
017	SESW	6	53	76	44.59402	-106.07080	Off-channel pit "PEK-5" (4C)		YES
*018	NESE	12	53	77	44.58189	-106.06017	Off-channel pit "Clarence" (4C)	NO	NO
019	NESE	11	53	77	44.58284	-106.08344	Off-channel pit "Jeff #5" (4C)	NO	NO
020	SENW	13	53	77	44.57086	-106.07172	Powder River (2ABWW) via Mickelberry Creek (3B) via an on-channel reservoir "PSK-5" (3B)	YES	
021	NENE	13	53	77	44.57453	-106.63008	Off-channel pit "Sorenson #2" (4C)	YES	NO
*022	SWNE	13	53	77	44.57086	-106.06900	Off-channel pit "Roken" (4C)	NO	YES
*023	NWSW	13	53	77	44.57010	-106.07788	Off-channel pit "Jeff #6" (4C)	NO	NO
*024	NENW	24	53	77	44.56250	-106.07119	Powder River (2ABWW) via an unnamed ephemeral tributary (3B) via an on-channel reservoir "Anna" (3B)	NO	YES
025	NWNW	24	53	77	44.56402	-106.07684	Powder River (2ABWW) via an unnamed ephemeral tributary (3B) via an on-channel reservoir "PCD24-2" (3B)	YES	YES
026	NWSE	13	53	77	44.57011	-106.06914	Powder River (2ABWW) via Mickelberry Creek (3B) via an unnamed ephemeral tributary (3B) via an on-channel reservoir "PSK-3" (3B)	YES	YES
027	SENW	13	53	77	44.57169	-106.07215	Powder River (2ABWW) via Mickelberry Creek (3B) via an on-channel reservoir "PSK-5" (3B)	YES	NO
028	NENW	24	53	77	44.56148	-106.07089	Off-channel pit "R2W-24-53-77" (4C)	YES	YES
*029	NWNE	23	53	77	44.56043	-106.08746	Off-channel pit "Jeff #7 ENL" (4C)	NO	NO
*030	NWSW	24	53	77	44.55530	-106.07537	Off-channel pit "Jeff #8" (4C)	NO	NO
031	NESE	23	53	77	44.55184	-106.07938	Off-channel pit "Jeff #10" (4C)	NO	NO
*032	SWNW	25	53	77	44.54302	-106.07868	Off-channel pit "Jeff #12" (4C)	NO	NO
CU1	SWNE	1	53	77	44.60214	-106.06830	Containment unit water quality monitoring station, 012, PEK-2	N/A	N/A
CU2	SWNE	1	53	77	44.60230	-106.06645	Containment unit water quality monitoring station, 013, PEK-3	N/A	N/A
CU3	NWNW	7	53	76	44.58996	-106.05960	Containment unit water quality monitoring station, 016, PSK-2	N/A	N/A

Out-fall	Qtr/Qtr	SECTION	TWP (N)	RNG (W)	LATITUDE	LONGITUDE	Drainage / Description	Groundwater approval required prior to Discharge?	Reservoir Bond to WDEQ Required prior to Discharge?
CU4	SESW	1	53	76	44.59381	-106.07164	Containment unit water quality monitoring station, 017, PEK-5	N/A	N/A
CU5	NENW	1	53	77	44.60364	-106.07213	Containment unit water quality monitoring station, 003, Jeff #1	N/A	N/A
CU6	SWNW	1	53	77	44.59955	-106.07842	Containment unit water quality monitoring station, 004, Jeff #2	N/A	N/A
CU7	NESE	2	53	77	44.59700	-106.08494	Containment unit water quality monitoring station, 006, Jeff #3	N/A	N/A
CU8	SWSE	2	53	77	44.59257	-106.08743	Containment unit water quality monitoring station, 007, Jeff #4	N/A	N/A
CU9	SWSW	1	53	77	44.59290	-106.07899	Containment unit water quality monitoring station, 008, Sorenson #1	N/A	N/A
CU10	SWNW	7	53	76	44.58741	-106.05614	Containment unit water quality monitoring station, 009, Donald	N/A	N/A
CU11	SWNW	12	53	77	44.58621	-106.07819	Containment unit water quality monitoring station, 010, Rye	N/A	N/A
CU12	SWNE	1	53	77	44.59980	-106.07043	Containment unit water quality monitoring station, 011, PEK-1	N/A	N/A
CU13	NWSW	6	53	76	44.59657	-106.05671	Containment unit water quality monitoring station, 014, PEK-4	N/A	N/A
CU14	NWSW	7	53	76	44.58232	-106.06012	Containment unit water quality monitoring station, 018, Clarence	N/A	N/A
CU15	NESE	11	53	77	44.58330	-106.08393	Containment unit water quality monitoring station, 019, Jeff #5	N/A	N/A
CU16	NWSW	13	53	77	44.57036	-106.07834	Containment unit water quality monitoring station, 023, Jeff #6	N/A	N/A
CU17	NENW	24	53	77	44.56148	-106.07080	Containment unit water quality monitoring station, 0238, R2W-24-53-77	N/A	N/A
CU18	NENE	13	53	77	44.57536	-106.06303	Containment unit water quality monitoring station, 021, Sorenson #2	N/A	N/A
CU19	SENW	13	53	77	44.57123	-106.06991	Containment unit water quality monitoring station, 022, Roken	N/A	N/A
CU20	SWNE	23	53	77	44.55879	-106.08744	Containment unit water quality monitoring station, 029, Jeff #7 ENL	N/A	N/A
CU21	NWSW	24	53	77	44.55555	-106.07528	Containment unit water quality monitoring station, 030, Jeff #8	N/A	N/A
CU22	SESE	23	53	77	44.55162	-106.07920	Containment unit water quality monitoring station, 031, Jeff #10	N/A	N/A
CU23	SWNW	25	53	77	44.54303	-106.07908	Containment unit water quality monitoring station, 032, Jeff #12	N/A	N/A
FM1	NENW	1	53	77	44.60329	-106.07828	Flow Monitoring Station	N/A	N/A
FM2	SWNW	1	53	77	44.59973	-106.08118	Flow Monitoring Station	N/A	N/A
FM3	NESE	2	53	77	44.59758	-106.08579	Flow Monitoring Station	N/A	N/A
FM4	SWSE	2	53	77	44.59312	-106.09138	Flow Monitoring Station	N/A	N/A
FM5	SWSW	1	53	77	44.59445	-106.08388	Flow Monitoring Station	N/A	N/A
FM6	SWNW	7	53	76	44.58692	-106.05633	Flow Monitoring Station	N/A	N/A

Out-fall	Qtr/Qtr	SECTION	TWP (N)	RNG (W)	LATITUDE	LONGITUDE	Drainage / Description	Groundwater approval required prior to Discharge?	Reservoir Bond to WDEQ Required prior to Discharge?
FM7	SWNW	12	53	77	44.58604	-106.08438	Flow Monitoring Station	N/A	N/A
FM8	SWNE	1	53	77	44.60042	-106.07528	Flow Monitoring Station	N/A	N/A
FM9	NWNE	7	53	77	44.60213	-106.07116	Flow Monitoring Station	N/A	N/A
FM10	NWSW	6	53	76	44.59762	-106.05948	Flow Monitoring Station	N/A	N/A
FM11	SESW	7	53	77	44.59393	-106.07227	Flow Monitoring Station	N/A	N/A
FM12	NWSW	7	53	76	44.58279	-106.05973	Flow Monitoring Station	N/A	N/A
FM13	NESE	11	53	77	44.58376	-106.08838	Flow Monitoring Station	N/A	N/A
FM14	NENE	13	53	77	44.57512	-106.06548	Flow Monitoring Station	N/A	N/A
FM15	SENW	13	53	77	44.57141	-106.07068	Flow Monitoring Station	N/A	N/A
FM16	SWSW	13	53	77	44.57259	-106.08288	Flow Monitoring Station	N/A	N/A
FM17	NENW	23	53	77	44.56091	-106.08984	Flow Monitoring Station	N/A	N/A
FM18	NWSW	24	53	77	44.55121	-106.07969	Flow Monitoring Station	N/A	N/A
FM19	SESE	23	53	77	44.55376	-106.07632	Flow Monitoring Station	N/A	N/A
TRIB1	NESW	1	53	77	44.59908	-106.07132	Tributary water quality monitoring station	N/A	N/A
TRIB2	NWNW	12	53	77	44.58942	-106.07403	Tributary water quality monitoring station	N/A	N/A
TRIB3	SWSW	13	53	77	44.56455	-106.07861	Tributary water quality monitoring station	N/A	N/A
TRIB4	NWNW	13	53	77	44.57756	-106.07625	Tributary water quality monitoring station	N/A	N/A
UPR	NESE	34	53	77	44.52722	-106.10179	Upstream mainstem water quality monitoring station, Powder River	N/A	N/A
DPR	SWSE	16	54	77	44.64996	-106.12810	Downstream mainstem water quality monitoring station, Powder River	N/A	N/A

*Note: Asterisk denotes outfalls for which WDEQ has field-verified the Latitude and Longitude locations. These are considered to be the most accurate location data available for these outfalls, and will supersede Latitude and Longitude values presented in the application.

Requests for modification of the above list will be processed as follows. If the requested modification satisfies the definition of a minor permit modification as defined in 40 CFR 122.63 modifications will not be required to be advertised in a public notice. A minor modification constitutes a correction of a typographical error, increase in monitoring and/or reporting, revision to an interim compliance schedule date, change in ownership, revision of a construction schedule for a new source discharger, deletion of permitted outfalls, and/or the incorporation of an approved local pretreatment program.

A request for a minor modification must be initiated by the permittee by completing the form titled Wyoming Pollutant Discharge Elimination System Permit Modification Application For Coal Bed Methane. Incomplete application forms will be returned to the applicant.

The outfalls listed in Table 1 (located at the end of Part I) may be moved from the established location without submittal of a permit modification application provided all of the following conditions are satisfied:

1. The new outfall location is within 2640 feet of the established outfall location.
2. The new outfall location is within the same drainage or immediate permitted receiving waterbody.
3. There is no change in the affected landowners.
4. Notification of the change in outfall location must be provided to the WYPDES Permits Section on a form provided by the WQD Administrator within 10 days of the outfall location change. The form must be provided in duplicate and legible maps showing the previous and new outfall location must be attached to the form.

Moving an outfall location without satisfying the four above listed conditions will be considered a violation of this permit and subject to full enforcement authority of the WQD.

An outfall relocation as described above will not be allowed if the new outfall location is less than one mile from the confluence of a Class 2 waterbody and the dissolved iron limits established in the permit for the outfall are based upon Class 3 standards.

C. RESERVOIR / IMPOUNDMENT REQUIREMENTS

1. Groundwater Monitoring Beneath Impoundments:

Table 1 of the permit above identifies which outfalls (if any) are designed to discharge into impoundments that are subject to groundwater monitoring requirements established in the latest version of the Water Quality Division guideline "*Compliance Monitoring for Groundwater Protection Beneath Unlined Coalbed Methane Produced Water Impoundments.*" These specified outfalls are not authorized to discharge until a written groundwater compliance approval has been granted by the Groundwater Pollution Control Program of the Water Quality Division. Once an impoundment has been granted a written groundwater compliance approval, the contributing outfall(s) to that reservoir may commence discharge.

2. Reclamation Performance Bonds for On-Channel Reservoirs:

Table 1 of the permit above also identifies which outfalls (if any) are designed to discharge into impoundments that are subject to WDEQ bonding requirements, as set forth in the latest version of the Water Quality Division guideline "*Implementation Guidance for Reclamation and Bonding of On-Channel Reservoirs That Store Coalbed Natural Gas Produced Water.*" These specified outfalls are not authorized to discharge until the associated reservoir reclamation bond is approved by WDEQ. Once the reservoir reclamation bond is approved by WDEQ, the contributing outfall(s) to that reservoir may commence discharge.

Any discharge into an above-listed impoundment which has not been secured by the required WDEQ-approved bond, or which has not been granted the required groundwater compliance approval, will constitute a violation of this permit, and may result in enforcement action from the Water Quality Division.

PART II

A. MANAGEMENT REQUIREMENTS

1. Changes

The permittee shall give notice to the administrator of the Water Quality Division as soon as possible of any physical alterations or additions to the permitted facility. Notice is required when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as determined in 40 CFR 122.29 (b);
or
- b. The alteration or addition could change the nature or increase the quantity of pollutants discharged.

2. Noncompliance Notification

- a. The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- b. The permittee shall report any noncompliance which may endanger health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Water Quality Division, Wyoming Department of Environmental Quality at (307) 777-7781.
- c. For any incidence of noncompliance, including noncompliance related to non-toxic pollutants or non-hazardous substances, a written submission shall be provided within five (5) days of the time that the permittee becomes aware of the noncompliance circumstance.

The written submission shall contain:

- (1) A description of the noncompliance and its cause;
 - (2) The period of noncompliance, including exact dates and times;
 - (3) The estimated time noncompliance is expected to continue if it has not been corrected; and
 - (4) Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance.
- d. The following occurrences of unanticipated noncompliance shall be reported by telephone to the Water Quality Division, WYPDES Program (307) 777-7781 as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances.

- (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
 - (2) Any upset which exceeds any effluent limitation in the permit; or
 - (3) Violation of a maximum daily discharge limitation for any toxic pollutants or hazardous substances, or any pollutants specifically identified as the method to control a toxic pollutant or hazardous substance listed in the permit.
- e. The administrator of the Water Quality Division may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Water Quality Division, WYPDES Program (307) 777-7781.
- f. Reports shall be submitted to the Wyoming Department of Environmental Quality at the address in Part I under Reporting and to the 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.
- g. The permittee shall report all instances of noncompliance that have not been specifically addressed in any part of this permit at the time the monitoring reports are due.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit. However, the permittee shall operate, as a minimum, one complete set of each main line unit treatment process whether or not this process is needed to achieve permit effluent compliance.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypass of Treatment Facilities

- a. Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
- b. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs c. and d. of this section. Return of removed substances to the discharge stream shall not be considered a bypass under the provisions of this paragraph.

- c. Notice:
 - (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice at least 60 days before the date of the bypass.
 - (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part II.A.2.
- d. Prohibition of bypass.
 - (1) Bypass is prohibited and the administrator of the Water Quality Division may take enforcement action against a permittee for a bypass, unless:
 - (a) The bypass was unavoidable to prevent loss of life, personal injury or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (c) The permittee submitted notices as required under paragraph c. of this section.
- e. The administrator of the Water Quality Division may approve an anticipated bypass, after considering its adverse effects, if the administrator determines that it will meet the three conditions listed above in paragraph d. (1) of this section.

6. Upset Conditions

- a. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improper designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph c. of this section are met.
- c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;

- (3) The permittee submitted notice of the upset as required under Part II.A.2; and
- (4) The permittee complied with any remedial measures required under Part II.A.4.

d. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

7. Removed Substances

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters or intake waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the state.

8. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. In accordance with a schedule of compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities; or
- b. If such alternative power source as described in paragraph a. above is not in existence and no date for its implementation appears in Part I, take such precautions as are necessary to maintain and operate the facility under its control in a manner that will minimize upsets and insure stable operation until power is restored.

9. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal act and the Wyoming Environmental Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give the administrator of the Water Quality Division advance notice of any planned changes at the permitted facility or of any activity which may result in permit noncompliance.

10. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

11. Signatory Requirements

All applications, reports or information submitted to the administrator of the Water Quality Division shall be signed and certified.

- a. All permit applications shall be signed as follows:
 - (1) For a corporation: by a responsible corporate officer;
 - (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;

- (3) For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected official.
- b. All reports required by the permit and other information requested by the administrator of the Water Quality Division shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - (1) The authorization is made in writing by a person described above and submitted to the administrator of the Water Quality Division; and
 - (2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
 - c. If an authorization under paragraph II.A.11.b. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph II.A.11.b must be submitted to the administrator of the Water Quality Division prior to or together with any reports, information or applications to be signed by an authorized representative.
 - d. Any person signing a document under this section shall make the following certification:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

B. RESPONSIBILITIES

1. Inspection and Entry

If requested, the permittee shall provide written certification from the surface landowner(s), if different than the permittee, that the administrator or the administrator's authorized agent has access to all physical locations associated with this permit including well heads, discharge points, reservoirs, monitoring locations, and any waters of the state.

The permittee shall allow the administrator of the Water Quality Division or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the federal act, any substances or parameters at any location.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the regional administrator of the Environmental Protection Agency and the administrator of the Water Quality Division. The administrator of the Water Quality Division shall then provide written notification to the new owner or controller of the date in which they assume legal responsibility of the permit. The permit may be modified or revoked and reissued to change the name of the permittee and incorporate such other requirements as described in the federal act.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the federal act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Wyoming Department of Environmental Quality and the regional administrator of the Environmental Protection Agency. As required by the federal act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the federal act.

4. Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established under Section 307 (a) of the federal act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Changes in Discharge of Toxic Substances

Notification shall be provided to the administrator of the Water Quality Division as soon as the permittee knows of, or has reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (1) One hundred micrograms per liter (100 µg/l);
 - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21 (g) (7); or
 - (4) The level established by the director of the Environmental Protection Agency in accordance with 40 CFR 122.44 (f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21 (g) (7); or
 - (4) The level established by the director of the Environmental Protection Agency in accordance with 40 CFR 122.44 (f).

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. As long as the conditions related to the provisions of "Bypass of Treatment Facilities" (Part II.A.5), "Upset Conditions" (Part II.A.6), and "Power Failures" (Part II.A.8) are satisfied then they shall not be considered as noncompliance.

7. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the federal act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties established pursuant to any applicable state or federal law or regulation. In addition, issuance of this permit does not substitute for any other permits required under the Clean Water Act or any other federal, state, or local law.

10. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights nor any infringement of federal, state or local laws or regulations.

11. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit.

12. Duty to Provide Information

The permittee shall furnish to the administrator of the Water Quality Division, within a reasonable time, any information which the administrator may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the administrator, upon request, copies of records required by this permit to be kept.

13. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or any report to the administrator of the Water Quality Division, it shall promptly submit such facts or information.

14. Permit Action

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

15. Permit Fees

Once this permit has been issued, the permittee will be assessed a \$100.00 per-year permit fee by the Water Quality Division. The fee year runs from January 1st through December 31st. This permit fee will continue to be assessed for as long as the permit is active, regardless of whether discharge actually occurs. This fee is not pro-rated. If the permit is active during any portion of the fee year, the full fee will be billed to the permittee for that fee year. In the event that this permit is transferred from one permittee to another, each party will be billed the full permit fee for the fee year in which the permit transfer was finalized.

PART III

A. OTHER REQUIREMENTS

1. Flow Measurement

At the request of the administrator of the Water Quality Division, the permittee must be able to show proof of the accuracy of any flow measuring device used in obtaining data submitted in the monitoring report. The flow measuring device must indicate values of within plus or minus ten (10) percent of the actual flow being measured.

2. 208(b) Plans

This permit may be modified, suspended or revoked to comply with the provisions of any 208(b) plan certified by the Governor of the State of Wyoming.

3. Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations (and compliance schedule, if necessary) or other appropriate requirements if one or more of the following events occurs:

- a. The state water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit;
- b. A total maximum daily load (TMDL) and/or watershed management plan is developed and approved by the state and/or the Environmental Protection Agency which specifies a wasteload allocation for incorporation in this permit;
- c. A revision to the current water quality management plan is approved and adopted which calls for different effluent limitations than contained in this permit;
- d. Downstream impairment is observed and the permitted facility is contributing to the impairment;
- e. The limits established by the permit no longer attain and/or maintain applicable water quality standards;
- f. The permit does not control or limit a pollutant that has the potential to cause or contribute to a violation of a state water quality standard.
- g. If new applicable effluent guidelines and/or standards have been promulgated and the standards are more stringent than the effluent limits established by the permit.
- h. In order to protect water quality standards in neighboring states, effluent limits may be incorporated into this permit or existing limits may be modified to ensure that the appropriate criteria, water quality standards and assimilative capacity are attained.
- i. If new, additional or more stringent permit conditions are necessary for control of erosion downstream of the discharges to ensure protection of water quality standards.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- d. If necessary to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b) (2) (C) and (D), 304 (b) (2) and 307 (a) (2) of the federal act, if the effluent standard or limitation so issued or approved:
 - (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) Controls any pollutant not limited in the permit.

5. Toxicity Limitation - Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include a new compliance date, additional or modified numerical limitations, a new or different compliance schedule, a change in the whole effluent protocol or any other conditions related to the control of toxicants if one or more of the following events occur:

- a. Toxicity was detected late in the life of the permit near or past the deadline for compliance;
- b. The TRE results indicate that compliance with the toxic limits will require an implementation schedule past the date for compliance and the permit issuing authority agrees with the conclusion;
- c. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits and the permit issuing authority agrees that numerical controls are the most appropriate course of action;
- d. Following the implementation of numerical controls on toxicants, the permit issuing authority agrees that a modified whole effluent protocol is necessary to compensate for those toxicants that are controlled numerically;
- e. The TRE reveals other unique conditions or characteristics which, in the opinion of the permit issuing authority, justify the incorporation of unanticipated special conditions in the permit.

6. Severability

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit, shall not be affected thereby.

7. Penalties for Falsification of Reports

The federal act provides that any person who knowingly makes any false statement, representation or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance 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.