

**Wyoming Department of Environmental Quality
Water Quality Division
WYPDES (Wyoming Pollution Discharge Elimination System) Program**

STATEMENT OF BASIS
NEW

APPLICANT NAME: Pinnacle Gas Resources, Inc.

MAILING ADDRESS: 1 East Alger, Suite 206
Sheridan, WY 82801

FACILITY LOCATION: Pinnacle-Wolff, which is located in the NESW, Section 36, Township 55 North, Range 74 West, and the NWSE, Section 6, Township 54 North, Range 73 West, and in the NESE, Section 1, Township 54 North, Range 74 West, Campbell County. The produced water will be discharged into three on-channel reservoirs "23-36-5574", "Joan", and "24-6-5473" (class 3B waters), located on unnamed, ephemeral tributaries (3B) of Hay Creek (3B). Hay Creek (3B) is tributary to the Little Powder River (2AB), via Horse Creek (3B). The permit establishes two irrigation compliance points, located as described in Table 1, Part I.B.12 of the permit. The permit also establishes a total maximum daily flow limit of 0.28 MGD, and requires that the produced water being discharged by this facility originate in one or more of the following formations: the Cook, Canyon, Wall, and/or Pawnee coal seams.

NUMBER: WY0053201

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 *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. The guideline limits oil and grease effluent concentrations to less than 35 mg/l and requires that discharges of produced water be used for agricultural production and/or wildlife propagation. 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.

The permittee has chosen option 2 of the coal bed methane permitting options. 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 2 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 has submitted documentation verifying that there is irrigation occurring downstream of this facility on Horse Creek, prior to the closest class 2 water. In order to monitor and protect irrigation water quality, this permit establishes two irrigation compliance points. The irrigation compliance points are designated monitoring locations prior to the first downstream points of irrigation diversion/use in Horse Creek from the permitted facility. The permittee has submitted information related to ambient water quality, mixing analyses, and water budgets that demonstrate that, during "dry" operating conditions, the CBM produced water will be contained within the on-channel reservoirs proposed as a major part of their water management plan. However, the reservoirs are not designed to accommodate the containment of precipitation runoff from a storm event of any appreciable size in addition to the CBM produced water. The representative water quality analyses submitted in support of this permit application originated from wells that will be authorized for discharge under this permit. As such, the representative water quality analyses indicate that the produced water discharges will easily meet ICP limits for specific conductance, as the specific conductance concentration of the discharge is well below 2000 micromhos/cm, and that the discharge is expected to be at or near an SAR concentration of 11. Therefore, minimal to no dilution would be needed for the discharges to meet ICP limits, and minimal to no decrease in crop production within the Horse Creek drainage is expected to occur as a result of this discharge.

The permit establishes two irrigation compliance points. The irrigation compliance points are designated monitoring locations prior to the first downstream point of irrigation diversion/use in Horse Creek from the permitted facility. Effluent limits associated with the irrigation compliance points: SAR = 11 and EC = 2000 micromhos/cm, were determined from a combination of one or more of the following: technical information submitted by the applicant, published scientific literature, credible water quality data that has been through formally adopted quality control/quality assurance review, and best professional judgment. These limits satisfy provisions under *Chapter 1, Section 20 (protection of agricultural water supply) of the Wyoming Water Quality Rules and Regulations*. The permittee has demonstrated that the on-channel reservoirs located within the Horse Creek drainage can contain all of the estimated discharge volume. In addition, this facility will be linked to several other facilities in the immediate area, which will allow the operator flexibility in water management options.

Review of the permit application reveals that the outfalls being permitted for discharge are located approximately 21 miles upstream of the Little Powder River - Horse Creek confluence.

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. Effluent limits for total dissolved solids (5,000 mg/l), specific conductance (7500 micromhos/cm), and sulfates (3,000 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 to discharges from all permitted outfalls.

The permit also establishes a dissolved manganese limit of 720 µg/l, and a chlorides limit of 46 mg/l. These limits are based on chronic aquatic life standards for class 2AB waters as established in *the Wyoming Water Quality Rules and Regulations, Chapter 1*. The permit also establishes a total barium limit of 1800 µg/l and a total arsenic limit of 3.6 µg/l, these limits are based on Water Quality Criteria as established in *the Wyoming Water Quality Rules and Regulations, Chapter 1*, for Human Health values. The limits established in this permit for metals and chlorides reflect the application of the antidegradation provisions required under *the Wyoming Water Quality Rules and Regulations, Chapter 1*.

In addition, the permit establishes a dissolved iron limit of 1000 µg/l, which is based upon chronic aquatic life standards for class 3B waters greater than one mile from the confluence of a class 2 water, and reflects the application of standards required under *Chapter 1 of the Wyoming Water Quality Rules and Regulations*. 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.

A limit for total recoverable aluminum – 750 µg/l – is also being established in this permit. This limit is based upon the acute aquatic life standard established in *Chapter 1 of the Wyoming Water Quality Rules and Regulations*. In the case of total recoverable aluminum, the chronic aquatic life value does not apply, based upon the hardness and pH of the receiving stream. This limit applies at the end of pipe.

The water balances and mixing calculations submitted in support of the permit application were based on a maximum effluent flow of 0.28 MGD, and water quality representative of the Cook, Canyon, Wall, and Pawnee coal seams at this facility. Therefore, the permit establishes a total maximum daily flow limit of 0.28 million gallons per day (MGD), to be calculated as the sum of all discharge from all permitted outfalls, and requires that the produced water being discharged by this facility originate in one or more of the following formations: the Cook, Canyon, Wall, and/or Pawnee coal seams.

Irrigation Protection

In order to monitor and regulate coal bed methane discharge for compliance with *Chapter 1, Section 20 (protection of agricultural water supply)*, effluent limits for sodium adsorption ratio (SAR) and specific conductance are included in this permit. The Wyoming DEQ has determined that an SAR of 11 and a specific conductance of 2000 micromhos/cm are intended to be protective of agriculture use in the Horse Creek drainage. The specific conductance limit of 2000 micromhos/cm is based on the threshold value for alfalfa which is considered to be the most salt sensitive plant irrigated in northeastern Wyoming (*USDA George E. Brown Jr. Salinity Laboratory, Salt Tolerance Database, Grasses and Forage Crops*). There was no data available to characterize EC tolerance of alfalfa specific to the Horse Creek drainage. The SAR limit of 11 was determined to not reduce the rate of infiltration of irrigated soils in the Horse Creek drainage, given the specific conductance threshold referenced above as ascertained from *Figure 3 (page 44) of Agricultural Salinity and Drainage, Hanson et al., 1999 revision*. In addition, information from the Section 20 Analysis submitted in support of NPDES permit WY0046213 provided information used in establishment of the SAR limit of 11 and is intended to be protective of irrigation uses in the Horse Creek drainage. An SAR limit of 11 and specific conductance limit of 2000 micromhos/cm will also maintain the baseline C4-S2 irrigation suitability category for the Little Powder River drainage (see *Figure 25, of Diagnosis and Improvement of Saline and Alkali Soils, US Dept. of Agricultural Handbook No. 60, 1954*). Monitoring will be required for flow volume, calcium, magnesium, sodium, bicarbonate, sodium adsorption ratio and specific conductance when flow is present at the irrigation compliance point(s) at any time during the year.

The effluent limits at the ICP are intended to demonstrate compliance with *Chapter 2, Section 20 (protection of agricultural water supply) of the Wyoming Water Quality Rules and Regulations*. If produced water from this facility reaches the ICP and results in a violation of the ICP effluent limits, this action will constitute a violation of this permit, regardless of the cause of the violation (i.e., natural conditions of the stream channel or other operators in the drainage.) If this facility's effluent does not reach an irrigation compliance point, then monitoring and compliance with the ICP effluent limits are not required.

Violation of the ICP effluent limits may result in enforcement action from the Water Quality Division, termination of the discharge until an acceptable plan to mitigate the violation has been developed and/or other appropriate enforcement action.

Monitoring and Reporting

The permit requires daily monitoring on two unnamed, ephemeral tributaries of Hay Creek, to determine whether water discharged from the outfalls reaches an established irrigation compliance point. Daily monitoring is necessary because the permit establishes different sampling and analysis requirements based on whether the effluent reaches an irrigation compliance point. The irrigation compliance points are to be located as described in Table 1, Part I.B.12 of the following permit. Once effluent flow at an irrigation compliance point has been documented within a sampling month, then weekly monitoring of flow is required for the month. At the beginning of each calendar month, the frequency will revert to daily until such time as flow occurs at the irrigation compliance point and a sample is collected to represent effluent quality for irrigation compliance point constituents for that month. Effluent samples must be collected on a weekly basis if flow persists at the irrigation compliance point for 24 hours or more. Results are to be reported twice-yearly and if no flow occurs then "no discharge" is to be reported. If flow occurs at the ICP station 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 ICP station, 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 ICP station. If no flow at all occurs at the ICP station for an entire monthly monitoring period, then "no flow" is to be reported on the discharge monitoring reports.

The permit requires sampling at a designated tributary water quality monitoring station located on the receiving stream – Horse Creek, and at mainstem water quality monitoring station locations on the Little Powder River upstream and downstream of the Horse Creek - Little Powder River confluence, located as described in Table 1, Part I.B.12 of the following permit. Water quality monitoring stations on the Little Powder River will be located in the main channel of the Little Powder River outside of the mixing zone of Horse Creek and the Little Powder River. Effluent samples at the designated water quality monitoring stations must be collected on a monthly basis and are to be reported semiannually. 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, ULPR, and DLPR in Table 1, Part I.B.12 of the permit below. 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 three water quality monitoring stations when effluent from this CBM facility reaches the TRIB1 station on Horse Creek. If flow occurs at the TRIB1 station 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 three 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 station. If no flow occurs at the TRIB1 station for an entire monthly monitoring period, then "no flow" is to be reported and samples need not be collected at the three 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. Established water quality monitoring stations on the mainstem are to be located outside the mixing zone of the tributary with the mainstem

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.

General Requirements

Reservoir and/or discharge water is to be released at a rate which does not cause significant erosion to the channel or receiving lands. Intentional discharges from the reservoirs are not allowed under this permit. The reservoirs may discharge in response to precipitation events or upstream reservoir overflow that causes the reservoirs to fill and overtop only. In the event of a stormwater runoff or upstream reservoir overflow causes the reservoirs to discharge, such discharges will be limited to natural overtopping of the reservoir only.

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 December 31, 2008, which is reflective of the WDEQ's efforts towards watershed permitting and similar expiration dates for all permits within a specific drainage, which will allow for basin-wide analysis upon renewal of the permits in the drainage.

Kathy Shreve
Water Quality Division
Department of Environmental Quality
Drafted: April 20, 2005

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,

Pinnacle Gas Resources, Inc.

is authorized to discharge from the wastewater treatment facilities serving the

Pinnacle-Wolff,

which is located in the

NESW, Section 36, Township 55 North, Range 74 West, and the NWSE, Section 6, Township 54 North, Range 73 West, Campbell County,

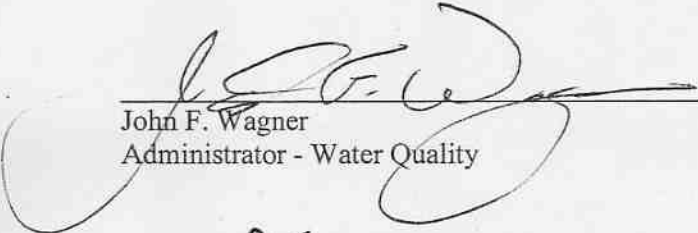
to receiving waters named

three on-channel reservoirs "23-36-5574", "Joan", and "24-6-5473" (class 3B waters), located on an unnamed, ephemeral tributaries of (3B) of Hay Creek (3B). Hay Creek (3B) is tributary to the Little Powder River (2AB), via Horse Creek (3B),

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.

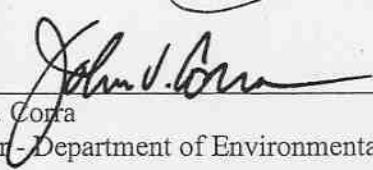
This permit and the authorization to discharge shall expire December 31, 2008, at midnight.



John F. Wagner
Administrator - Water Quality

Date

7/19/05



John V. Conra
Director - Department of Environmental Quality

Date

7/19/05

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effective immediately and lasting through December 31, 2008, 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 001-003.

1.a. Discharges from all outfalls are limited as specified below:

Effluent Limits

<u>Effluent Characteristic</u>	<u>Daily Maximum Outfall</u>	<u>Daily Maximum Irrigation Compliance Point</u>
Chlorides, mg/l	46	
Dissolved Iron, µg/l	1000	
Dissolved Manganese, µg/l	720	
pH, standard units	6.5 – 9.0	
Specific Conductance, micromhos/cm	7500	2000
Sodium Adsorption Ratio, calculated as unadjusted ratio		11
Sulfates, mg/l	3000	
Total Recoverable Aluminum, µg/l	750	
Total Arsenic, µg/l	3.6	
Total Barium, µg/l	1800	
Total Dissolved Solids, mg/l	5000	
Total Flow, MGD*	0.28	

*Total flow is to be calculated as the sum of all discharge from all permitted outfalls. The permit requires that the produced water being discharged by this facility originate in one or more of the following formations: the Cook, Canyon, Wall, and/or Pawnee coam seams.

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, if so desired, discharge effluent from any authorized well to any permitted outfall, as long as all permit limits and requirements can be met. This facility, as originally permitted, consists of 3 outfalls and 58 wells.

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.

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.

Reservoir and/or discharge water is to be released at a rate which does not cause significant erosion to the channel or receiving lands. Intentional discharges from the reservoirs are not allowed under this permit. The reservoirs may discharge in response to precipitation events or upstream reservoir overflow that causes the reservoirs to fill and overtop only. In the event of a stormwater runoff or upstream reservoir overflow causes the reservoirs to discharge, such discharges will be limited to natural overtopping of the reservoir only.

2. a. Monitoring of the initial discharge

Within 60 days of commencement of discharge, a sample shall be collected from each outfall and analyzed for all of 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.

Parameter* (See notes following the table on chemical states)	Required Detection Limits and Required Units
Alkalinity, Total	1 mg/l as CaCO ₃
Aluminum, Total Recoverable	50 µg/l
Arsenic, Total	1 µg/l
Barium, Total	100 µg/l
Bicarbonate	10 mg/l
Cadmium, Dissolved	5 µg/l

<u>Parameter*</u> (See notes following the table on chemical states)	<u>Required Detection Limits and Required Units</u>
Calcium, Dissolved	50 µg/l, report as me/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
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 me/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	0.2 pCi/l
Selenium, Total Recoverable	5 µg/l
Sodium Adsorption Ratio	Calculated as unadjusted ratio
Sodium, Dissolved	100 µg/l, report as me/l
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
 999 18th St., Suite 300
 Denver, CO 80202-2466

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

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>
Bicarbonate (mg/l)	Once every six months	Grab
Dissolved calcium (mg/l)	Monthly	Grab
Dissolved calcium (me/l)	Monthly	Grab
Chloride (mg/l)	Annually	Grab
Dissolved Iron (µg/l)	Annually	Grab
Dissolved Manganese (µg/l)	Annually	Grab
Dissolved Magnesium (mg/l)	Monthly	Grab
Dissolved Magnesium (me/l)	Monthly	Grab
pH (standard units)	Once Every Three Months	Grab
Dissolved Sodium (mg/l)	Monthly	Grab
Dissolved Sodium (me/l)	Monthly	Grab
Sodium Adsorption Ratio (unadjusted)	Monthly	Calculated
Specific Conductance (micromohs/cm)	Monthly	Grab
Sulfate (mg/l)	Annually	Grab
Total Alkalinity (mg/l)	Once Every Six Months	Grab
Total Arsenic (µg/l)	Annually	Grab
Total Barium (µg/l)	Annually	Grab
Total Flow - (MGD)	Monthly	Continuous
Total Recoverable Aluminum (µg/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. Irrigation compliance points - ICP1-ICP2

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies when water discharged from any permitted outfall reaches the irrigation compliance point as described in Table 1, Part I.B.12 of the permit. Irrigation compliance point requirements are in effect year-round due to the downstream irrigator's inability to divert stream flows away from the fields undergoing irrigation.

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Dissolved Calcium (mg/l)	Monthly	Grab
Dissolved Calcium (me/l)	Monthly	Grab
Dissolved Magnesium (mg/l)	Monthly	Grab
Dissolved Magnesium (me/l)	Monthly	Grab
Dissolved Sodium (mg/l)	Monthly	Grab
Dissolved Sodium (me/l)	Monthly	Grab
Sodium Adsorption Ratio (calculated as unadjusted ratio)	Monthly	Calculated
Specific Conductance (micromohs/cm)	Monthly	Grab
Total Flow - (MGD)	Monthly	Instantaneous

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at the irrigation compliance points, which are located as described in Table 1, Part I.B.12, prior to the first downstream irrigation diversions on Horse Creek.

The permit requires daily monitoring on two unnamed, ephemeral tributaries of Hay Creek to determine whether water discharged from the outfalls reaches an established irrigation compliance point. Daily monitoring is necessary because the permit establishes different sampling, monitoring and analysis requirements based on whether the effluent reaches the irrigation compliance point. Once effluent flow at an irrigation compliance point has been documented within a calendar month, then weekly monitoring of flow at that ICP is required for the remainder of that calendar month. At the beginning of each calendar month, the monitoring frequency will revert to daily until such time as effluent flow occurs at that irrigation compliance point and a sample is collected to represent effluent quality for irrigation compliance point constituents. Results are to be reported twice-yearly and if no effluent from this facility reaches a particular irrigation compliance point during an entire sampling month, then "no discharge" is to be reported for the ICP for that month.

Should flows occur at the ICP on a more frequent and/or persistent basis; or impacts to downstream irrigation be more substantial than were estimated in the permit application materials, the WDEQ may reopen the permit to modify existing limits and/or include additional limits and/or requirements.

The effluent limits at the ICP are intended to demonstrate compliance with *Chapter 2, Section 20 (protection of agricultural water supply) of the Wyoming Water Quality Rules and Regulations*. If produced water from this facility reaches the ICP and results in a violation of the ICP effluent limits, this action will constitute a violation of this permit, regardless of the cause of the violation (i.e., natural conditions of the stream channel or other operators in the drainage.) If this facility's effluent does not reach an irrigation compliance point, then monitoring and compliance with the ICP effluent limits are not required.

Violation of the ICP effluent limits may result in enforcement action from the Water Quality Division, termination of the discharge until an acceptable plan to mitigate the violation has been developed and/or other appropriate enforcement action.

d. Water Quality Monitoring Stations TRIB1, ULPR, DLPR

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 Calcium (me/l)	Monthly	Grab
Dissolved Magnesium (mg/l)	Monthly	Grab
Dissolved Magnesium (me/l)	Monthly	Grab
Dissolved Sodium (mg/l)	Monthly	Grab
Dissolved Sodium (me/l)	Monthly	Grab
Sodium Adsorption Ratio (calculated as unadjusted ratio)	Monthly	Calculated
Specific Conductance (micromohs/cm)	Monthly	Grab
Flow* (MGD)	Monthly	Instantaneous
Temperature, degrees Celsius	Monthly	Grab

*The permittee is only required to monitor and report flow at the tributary monitoring station on Horse Creek (TRIB1). The permittee is not required to monitor or report flow data at the mainstem water quality monitoring stations (ULPR and DLPR), see Table 1, Part I.B.12 for 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, ULPR, and DLPR in Table 1 (located at the end of Part I) of the permit below. 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 three water quality monitoring stations when effluent from this CBM facility reaches the TRIB1 station on Horse Creek. If flow occurs at the TRIB1 station 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 three 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 station. If no flow at all occurs at the TRIB1 station for an entire monthly monitoring period, then "no flow" is to be reported and samples need not be collected at the three water quality monitoring stations for that monthly monitoring period.

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 compliance 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 due following the issuance of this permit is due on February 15, 2006.

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

