Wyoming Department of Environmental Quality
Water Quality Division
WYPDES Program

STATEMENT OF BASIS

Major Modification

APPLICANT NAME: Pennaco Energy, Inc.

MAILING ADDRESS: 3601 Southern Drive
Gillette, WY 82718

FACILITY LOCATION: Brinkerhoff #6, Option 2, which is located in the SWSE, Section 6, the NENW, Section 7, the NWNW and the SENW, Section 8, Township 57 North, Range 82 West, and in the SENE, SWNE, and the NESW, Section 12, and the NENW, Section 13, Township 57 North, Range 83 West, Sheridan County. The produced water will be discharged to various named, on-channel reservoirs (3B) located on Rock Draw (3B) and Cedar Draw (3B), which are both tributary to Coutant Creek (3B). Coutant Creek is tributary to the Tongue River (2AB), via Prairie Dog Creek (2AB). The permit establishes a total maximum daily flow limit of 1.21 MGD, and requires that the produced water being discharged from this facility originate in one of the following formations: the Dietz1, Dietz2, Dietz3, Monarch, and/or the Carney coal seams.

NUMBER: WY0051497

Upon approval of this major modification, the terms of permit WY0051497 are modified as follows:

1. ***The effluent limit for radium^{226} is updated to distance-based limits in accordance with current WDEQ permitting approaches.***
2. ***The pH limit is updated.***
3. ***The locations of outfalls 001-006 are updated from their "as-permitted" locations to their "as-built" locations.***
4. ***The monitoring frequency required for both bicarbonate and total alkalinity are updated from monthly irrigation sampling to once per six months.***
5. ***In accordance with current WDEQ policy, the effluent limit and monitoring requirements for total petroleum hydrocarbons (TPH) are removed.***

With the exception of items explicitly delineated in this major modification, all terms of permit WY0051497, including Parts II and III of the original permit, shall remain unchanged and in full force and effect.

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 judgement 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 to enhance 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 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 has submitted documentation verifying that there is no irrigation occurring downstream of this facility on the class 3 streams prior to Prairie Dog Creek, the closest class 2 water.

The Wyoming DEQ has determined through review of the permit application and available scientific information that effluent discharged from this facility will be put to agricultural and/or wildlife use and is unlikely to reach the Tongue River except during storm events. During storm events, the effluent will be diluted by the stormwater runoff. The permittee has collected stormwater flow and quality data during the year prior to submittal of their permit application to the WDEQ from the streams in this area. The information collected included water quality and flow data from the ephemeral streams proposed for discharge, collection of evaporation/infiltration data in the streams and on-channel reservoirs proposed for discharge, and anecdotal information from long-time residents of the area. This information, along with established information available from the USGS, was utilized in the mixing analyses and water budgets performed by the permittee.

The results of these analyses indicate minimal to no impacts to Prairie Dog Creek and Tongue River water quality should the reservoirs overtop and spill in response to a storm event. The data submitted in support of the permit application indicates that although these discharges will result in increases in SAR (from SARs (ranging from 1 to 2.3 to SARS ranging from 2.3 to 5) and EC (from ECs ranging from 1035 to 2078 µmhos/cm to Ecs ranging from 1324 to 2099 µmohs/cm) to Prairie Dog Creek, these increases will be infrequent (lowest reoccurrence interval is 1.08 years) and temporary (approximately 3 hours in duration), due to the sporadic and short term nature of storm events in the project area. Although the discharges may potentially temporarily cause increases in Prairie Dog Creek and Tongue River SAR and specific conductance concentrations, the resultant water quality is suitable for irrigation. Especially considering the temporary and sporadic nature of the potential increases in SAR and EC, the potential for decreases in crop production as a result of the proposed discharge is considered to be very minimal, as decreases in crop production due to sodicity and salinity are the result of long-term, consistent application of saline and/or sodic irrigation water.

The analyses also demonstrate that, based on monthly average SAR and EC calculated utilizing USGS data recorded from the Tongue River station near Decker, Montana, discharges from the reservoirs being utilized to contain CBM produced water will result in at most, a 10 micromoh/cm increase in EC, and a 0.04 increase in SAR in Tongue River water quality for no longer than 28 hours. Average increases in SAR and EC modeled utilizing stormwater runoff flows and quality for various sizes of storm events are described in the table below:

All values reported as difference between recorded average ambient and estimated water quality upon								
2YR/24HR EVENT			**5YR/24HR EVENT**			**10YR/24HR EVENT**		
	EC	SAR		EC	SAR		EC	SAR
January	6	0.02	January	8	0.03	January	8	0.04
February	8	0.02	February	10	0.04	February	10	0.04
March	5	0.01	March	6	0.03	March	7	0.03
April	5	0.01	April	6	0.02	April	7	0.02
May	4	0.01	May	6	0.02	May	7	0.02
June	2	0.01	June	4	0.01	June	5	0.01
July	4	0.01	July	7	0.02	July	7	0.02
August	6	0.02	August	7	0.03	August	7	0.03
September	4	0.01	September	6	0.02	September	7	0.02
October	5	0.02	October	7	0.03	October	7	0.03
November	6	0.02	November	9	0.03	November	9	0.03
December	7	0.02	December	8	0.03	December	9	0.03
Average difference	5.27	0.015	Average difference	7.07	0.03	Average difference	7.42	0.03

However, in order to provide a measure of safety, the permittee has proposed an extensive network of monitoring locations on Coutant Creek, Prairie Dog Creek, and the Tongue River. These stations will serve to monitor any impacts that this facility may have on water quality in Prairie Dog Creek, Coutant Creek, and the Tongue River. Monitoring data collected at these stations during the life of the permit may result in the permit being reopened and new limits being established.

The permittee has submitted certified statements that demonstrate discharged effluent will be put to use for livestock and wildlife watering. Although most of the discharge will be used by wildlife and livestock, a portion of the flow may also be lost due to stream channel infiltration. Information gathered from Western Land Services, Sheridan Wyoming (April 19, 2001) and Hydrologic Consultants, Inc. (2001) indicate a mean channel infiltration loss rate for ephemeral drainages in the Tongue River at 0.1 cfs per mile of stream channel. Review of the permit application reveals that there are approximately 6 miles of stream channel that can be utilized for stream channel infiltration and evaporation losses between the outfalls and the Prairie Dog Creek. The maximum total effluent flow rate from this facility is estimated at 1.87 cfs. The permittee has committed that effluent shall not reach the Prairie Dog Creek except during storm events, and has provided data demonstrating their ability to contain all the CBM effluent in a series of on-channel reservoirs. However, in the event that discharge does reach Prairie Dog Creek or the Tongue River, this permit establishes a series of monitoring stations on Coutant Creek, Prairie Dog Creek, and the Tongue River. These stations will function to monitor any effluent flows to Prairie Dog Creek or the Tongue River.

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 discharge from any permitted outfall. In addition, the permit establishes a dissolved manganese limit of 50 µg/l, a total barium limit of 1800 µg/l, a total arsenic limit of 1.4 µg/l, and a chlorides limit of 46 mg/l. In addition, representative water quality data submitted by the permittee indicates that this facility has the potential to exceed the established dissolved zinc limit for discharges in this drainage. Therefore, the permit establishes a dissolved zinc limit of 33 ug/l, this limit applies to discharge from any permitted outfall. These limits are based on chronic aquatic life standards ("tier two" protection) for class 2AB waters which are intended to protect for the above listed designated uses and

reflect the application of the antidegradation provisions required under *Chapter 1 of the Wyoming Water Quality Rules and Regulations*. 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. The impact analysis submitted by the permittee was based upon a maximum daily flow of 1.21 million gallons per day (MGD) from this facility, and water quality representative of water quality from the Dietz1, Dietz2, Dietz3, Monarch, and Carney coal seams in the surrounding geographical area, therefore, the permit establishes a maximum daily flow limit of 1.21 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 Dietz1, Dietz2, Dietz3, Monarch, and/or Carney coal seams.

This permit originally established a total radium^{226} limit of 1 pCi/l and a total petroleum hydrocarbons (TPH) limit of 10 mg/l at the end of pipe. Based upon water quality data collected by WDEQ since the time this permit was originally issued, a permitting approach for establishing total radium limits in coal bed methane permits has been developed. This approach is based upon the distance of the outfall from a class 2 water. The removal of the originally-established total radium^{226} limit is based on this permitting approach. In addition, review of discharge monitoring report data for this facility and other CBM facilities in Northeast Wyoming indicates that the maximum reported concentrations for total petroleum hydrocarbons (TPH) in the discharge were well below the water quality standard of 10 mg/l established in Chapter 1 of the Wyoming Water Quality Rules and Regulations. Therefore, WDEQ has removed the effluent limit and monitoring requirement for TPH in this permit. Based on evaluation of the available data, it is WDEQ's determination that removing the total radium^{226} and total petroleum hydrocarbons limits from this permit conforms to the anti-backsliding requirements established in Section 402(o).2.B.i of the Clean Water Act.

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.

Reservoir and/or discharge water is to be released at a rate which does not cause significant erosion to the channel or receiving lands. The permittee has committed to containment of all CBM effluent within a series of on-channel reservoirs. The permittee is required to contain all effluent within the reservoirs, and may not discharge except during periods of time in which stormwater runoff enters the reservoir, causing it to overtop and spill. Should the reservoirs discharge, the permittee will be required to substantiate that the discharge was due to the influx of stormwater runoff.

The permit requires sampling at designated water quality monitoring stations located on the tributary – Coutant Creek, and the class 2AB receiving streams– Prairie Dog Creek and the Tongue River. The water quality monitoring station on Coutant Creek will be located in the main channel of the creek, prior to the Coutant Creek – Prairie Dog Creek confluence. The Prairie Dog Creek water quality monitoring stations will be located upstream and downstream of the Coutant Creek – Prairie Dog Creek confluence, in the main channel of Prairie Dog Creek, outside of the mixing zone of Coutant Creek and Prairie Dog Creek. The Tongue River water quality monitoring stations will be located upstream and downstream of the Prairie Dog Creek – Tongue River confluence, in the main channel of the Tongue River, outside of the mixing zone of Prairie Dog Creek and the Tongue River. Effluent samples at the designated water quality monitoring stations must be collected on a monthly basis and are to be reported semiannually. If no flow occurs at the tributary monitoring station on Coutant Creek, then "no discharge" is to be reported and samples need not be collected at the remaining water quality monitoring stations for that monthly sampling period. Should the

permittee be able to substantively document that this facility did not contribute to flows at the tributary monitoring station at any time during the monitoring period in question, the permittee may report "did not contribute" on the discharge monitoring reports for the monitoring period in question, and is not required to collect samples at the remaining water quality monitoring stations for the monitoring period in question. In such cases, the permittee is required to submit copies of the documentation verifying non-contribution in conjunction with the discharge monitoring reports for the monitoring period in question. At the designated water quality monitoring stations, monitoring will be required for calcium, magnesium, sodium, sodium absoprtion 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.

The designated water quality monitoring stations are located on Coutant Creek in the NWNE, Section 35, Township 58 North, Range 83 West, prior to the confluence of Prairie Dog Creek, on Prairie Dog Creek in the NWNE, Section 3, Township 57 North, Range 83 West and in the NWSW, Section 26, Township 58 North, Range 83 West, upstream and downstream (respectively) of the Coutant Creek – Prairie Dog Creek confluence, and on the Tongue River in the SWNW and NESE Section 23, Township 58 North, Range 83 West, upstream and downstream (resptectively) of the Prairie Dog Creek – Tongue River confluence. Water quality monitoring stations located on class 2 drainages are to be located in the main channels of the applicable drainage, and are to be located outside the mixing zone of the tributary with 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 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 April 30, 2009.

Kathy Shreve
Water Quality Division
Department of Environmental Quality
Drafted: March 2, 2004

Jennifer Zygmunt
Water Quality Division
Department of Environmental Quality
Drafted: January 30, 2006

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

Brinkerhoff #6, Option 2,

which is located in the

SWSE, Section 6, the NENW, Section 7, the NWNW and the SENW, Section 8, Township 57 North, Range 82 West, and in the SENE, SWNE, and the NESW, Section 12, and the NENW, Section 13, Township 57 North, Range 83 West, Sheridan County,

to receiving waters named

various named, on-channel reservoirs (3B) located on Rock Draw (3B) and Cedar Draw (3B), which are both tributary to Coutant Creek (3B). Coutant Creek is tributary to the Tongue River (2AB), via Prairie Dog Creek (2AB).

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

This major modification shall become effective on the date of signature by the Director of the Department of Environmental Quality. ***With the exception of items explicitly delineated in this major modification, all terms of permit WY0051497, including Parts II and III of the original permit, shall remain unchanged and in full force and effect.***

This permit and the authorization to discharge shall expire **April 30, 2009**, at midnight .

_____ _____

John F. Wagner
Administrator - Water Quality

Date

_____ _____

John V. Corra
Director - Department of Environmental Quality

Date

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effective immediately and lasting through April 30, 2009, 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 - 009.

1. Such discharges shall be limited as specified below:

Effluent Limits

Effluent Characteristic	Daily Maximum Outfall
Chlorides, mg/l	46
Dissolved Iron, µg/l	1000
Dissolved Manganese, µg/l	50
pH, standard units	6.5 – 9.0
Specific Conductance, micromhos/cm	7500
Sulfates, mg/l	3000
Total Arsenic, µg/l	1.4
Total Barium, µg/l	1800
Total Dissolved Solids, mg/l	5000
Total Flow, MGD*	1.21
Dissolved Zinc, µg/l	33

*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 on or more of the following formations: the Dietz1, Dietz2, Dietz3, Monarch, and/or Carney coal 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, contained 9 outfalls and 46 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.

The representative water quality analyses indicate that this facility's discharge has the potential to exceed the established permit limits for dissolved iron. However, the permittee has submitted information indicating that the installation of enhanced oxidation channels and stilling basins for dissolved iron can eliminate this problem by increasing the precipitation of iron out of the discharge. Therefore, the permittee will be required to, and has committed to, the installation of enhanced oxidation channels and stilling basins prior to the discharge reaching a water of the

state. Enhanced oxidation facilities must be installed and operational prior to commencement of discharge from this facility.

Reservoir and/or discharge water is to be released at a rate which does not cause significant erosion to the channel or receiving lands. The permittee has committed to containment of all CBM effluent within a series of on-channel reservoirs. The permittee is required to contain all effluent within the reservoirs, and may not discharge except during periods of time in which stormwater runoff enters the reservoir, causing it to overtop and spill. Should the reservoirs discharge, the permittee will be required to substantiate that the discharge was due to the influx of stormwater runoff.

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.

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

a. Monitoring of the initial discharge

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

Within 60 days of commencement of discharge, a sample shall be collected from each outfall and analyzed for the 24 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 26 constituents. 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
Calcium, Total	50 µg/l, report as meq/l
Calcium, Total	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, Total	100 µg/l, report as meq/l
Magnesium, Total	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, Total	100 µg/l, report as meq/l
Sodium, Total	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: Volume 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 – 001-009

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	Monthly	Grab
Dissolved Calcium	Monthly	Grab
Chloride	Annually	Grab
Dissolved Iron	Annually	Grab
Dissolved Manganese	Annually	Grab
Dissolved Magnesium	Monthly	Grab
pH	Once Every Six Months	Grab
Dissolved Sodium	Monthly	Grab
Sodium Adsorption Ratio	Monthly	Calculated
Specific Conductance	Monthly	Grab
Sulfate	Annually	Grab
Total Alkalinity	Monthly	Grab
Total Arsenic	Annually	Grab
Total Barium	Annually	Grab
Total Flow - (MGD)	Monthly	Continuous
Dissolved Zinc	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. Water Quality Monitoring Stations TRIB1, UPDC, DPDC, UTR, and DTR

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
Dissolved Calcium	Monthly	Grab
Dissolved Magnesium	Monthly	Grab
Dissolved Sodium	Monthly	Grab
Sodium Adsorption Ratio	Monthly	Calculated
Specific Conductance	Monthly	Grab
Flow*	Monthly	Instantaneous

*The permittee is only required to monitor and report flow at the tributary monitoring station located on Coutant Creek (TRIB1). The permittee is not required to monitor or report flow data at the mainstem water quality monitoring stations located on Prairie Dog Creek or the Tongue River (UPDC, DPDC, UTR or DTR), see Table 1 at the end of Part I for location descriptions.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): designated water quality monitoring stations located on the tributary – Coutant Creek, and the class 2AB receiving streams– Prairie Dog Creek and the Tongue River. The water quality monitoring station on Coutant Creek will be located in the main channel of the creek, prior to the Coutant Creek – Prairie Dog Creek confluence. The Prairie Dog Creek water quality monitoring stations will be located upstream and downstream of the Coutant Creek – Prairie Dog Creek confluence, in the main channel of Prairie Dog Creek, outside of the mixing zone of Coutant Creek and Prairie Dog Creek. The Tongue River water quality monitoring stations will be located upstream and downstream of the Prairie Dog Creek – Tongue River confluence, in the main channel of the Tongue River, outside of the mixing zone of Prairie Dog Creek and the Tongue River. Effluent samples at the designated water quality monitoring stations must be collected on a monthly basis and are to be reported semiannually. If no flow occurs at the tributary monitoring station on Coutant Creek, then "no discharge" is to be reported and samples need not be collected at the remaining water quality monitoring stations for that monthly sampling period. Should the permittee be able to substantively document that this facility did not contribute to flows at the tributary monitoring station at any time during the monitoring period in question, the permittee may report “did not contribute” on the discharge monitoring reports for the monitoring period in question, and is not required to collect samples at the remaining water quality monitoring stations for the monitoring period in question. In such cases, the permittee is required to submit copies of the documentation verifying non-contribution in conjunction with the discharge monitoring reports for the monitoring period in question. At the designated water quality monitoring stations, monitoring will be required for calcium, magnesium, sodium, sodium absorption ratio and specific conductance. Results are to be reported semiannually. Information gathered from the water

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

The designated water quality monitoring stations are located on Coutant Creek in the NWNE, Section 35, Township 58 North, Range 83 West, prior to the confluence of Prairie Dog Creek, on Prairie Dog Creek in the NWNE, Section 3, Township 57 North, Range 83 West and in the NWSW, Section 26, Township 58 North, Range 83 West, upstream and downstream (respectively) of the Coutant Creek – Prairie Dog Creek confluence, and on the Tongue River in the SWNW and NESE Section 23, Township 58 North, Range 83 West, upstream and downstream (respectively) of the Prairie Dog Creek – Tongue River confluence. Water quality monitoring stations located on class 2 drainages are to be located in the main channels of the applicable drainage, and are to be located outside the mixing zone of the tributary with the mainstem.

B. MONITORING AND REPORTING

1. Representative Sampling

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

2. Reporting

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

Results of routine end of pipe, 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 is due on August 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

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 flow monitoring locations (points of compliance). This sign shall, as 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 (lease, well number, etc.) and the outfall number as identified by the discharge permit.

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 Compliance Points

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

SEE TABLE 1 FOR A LIST OF WELLS, OUTFALLS, AND IRRIGATION COMPLIANCE POINTS

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

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 WyomingPollutant Discharge Elimination System Permit Modification Application For Coal Bed Methane. Incomplete application forms will be returned to the applicant.

The outfalls listed in the above table 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.

TABLE 1: OUTFALL and WQMS INFORMATION, WY00514970- Brinkerhoff #6 Option 2

Discharge Point # (Outfall)	Immediate Receiving Stream	Mainstem	Distance from outfall to mainstem (stream miles)	Quarter / Quarter	Section	Township	Range	Latitude	Longitude	Reservoir Name
001	Rock Draw	Tongue River	5.3	NWNW	8	57	82	44.937988	-106.77899	Brinkerhoff #1
002	Rock Draw	Tongue River	4.6	SWSE	6	57	82	44.938207	-106.788565	Waterhole #1
003	Cedar Draw	Tongue River	5.2	NENW	7	57	82	44.933655	-106.796816	Cow Town
004	Rock Draw	Tongue River	6.1	SENW	8	57	82	44.933801	-106.77497	Nash #1
005	Rock Draw	Tongue River	4.8	NWNW	8	57	82	44.934835	-106.777967	Nash #3
006	Cedar Draw	Tongue River	5.4	SENE	12	57	83	44.930527	-106.806385	Cedar Draw
007	Cedar Draw	Tongue River	5.2	SWNE	12	57	82	44.93077	-106.810468	Red Bluff
008	Cedar Draw	Tongue River	5.7	NESW	12	57	82	44.928153	-106.813861	Red Rocks
009	Cedar Draw	Tongue River	5.9	NENW	13	57	83	44.921328	-106.814628	Cedar Draw #2
UPDC	Upstream Prairie Dog Creek	Tongue River		NWNE	3	57	83	44.9503	-106.8523	
DPDC	Downstream Prairie Dog Creek	Tongue River		NWSW	26	58	83	44.9721	-106.8387	
TRIB1	Coutant Creek	Prairie Dog Creek		NWNE	35	58	83	44.966263	-106.832039	
UTR	Upstream Tongue River	Tongue River		SWNW	23	58	83	44.991948	-106.839334	
DTR	Downstream Tongue River	Tongue River		NESE	23	58	83	44.98875	-106.824973	