

**Wyoming Department of Environmental Quality  
Water Quality Division  
WYPDES Program**

**Statement of Basis**

RENEWAL

APPLICANT NAME: Pauper's Dream Company

MAILING ADDRESS: 250 Eudora St.  
Denver, CO 80220

FACILITY LOCATION: West Esponda Water Treatment Facility, which is located in the NENE, SWNE, and NESE of Section 11, Township 49 North, Range 80 West, all in Johnson County. Following treatment with a system, the produced water will be discharged directly to Crazy Woman Creek (class 2AB) which is tributary to the Powder River (class 2ABWW). The daily maximum permitted flow rate for this facility is 1.68 million gallons per day (MGD).

NUMBER: WY0054640

*This permit has been updated during the renewal process to incorporate all current WDEQ permitting requirements. The permittee will use a water treatment system to meet effluent limits for EC, dissolved sodium, and TDS at the end-of-pipe.*

**General 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.

**Facility Description**

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 outfalls at this facility employ effluent treatment and are authorized to discharge up to a maximum of 1.68 million gallons per day (MGD) to Crazy Woman Creek. In order to meet the required effluent limits for discharge to Crazy Woman Creek, the permittee plans to treat all effluent prior to discharge. Any concentrated waste generated in the operation of this treatment unit will be contained in lined pits, outside of any natural stream channels or water bodies. These lined pits will not constitute waters of the state and will therefore not require WYPDES permit coverage for discharge into them. However, the pits will require permitting through the Wyoming Oil and Gas Conservation Commission. In addition, the entire treatment facility will require a Chapter 3 permit-to-construct from the WDEQ District Engineer.

### **Effluent Limits**

#### Sulfate

This facility will utilize a treatment system in order to meet end-of-pipe effluent limits for EC and dissolved sodium. As operators have indicated that sources of sulfate are often utilized in the most common types of water treatment technologies currently being used in the treatment of CBM discharges, the WYPDES Program has established a sulfate limit of 815 mg/l to protect ambient water quality within the Crazy Woman Creek drainage. This limit is based upon the average of 233 sulfate measurements recorded by the USGS at gauging station 06316400, "Crazy Woman Creek at Upper Station near Arvada, Wyoming", and considers the accuracy of various quantitation methods utilized in the measurement of sulfate concentrations.

#### Hardness-Dependent Metals

This permit establishes effluent limits (shown in parentheses) for the following hardness-dependent metals: dissolved cadmium (1.3 µg/l), dissolved copper (8.6 µg/l), dissolved lead (2.3 µg/l), and dissolved zinc (80 µg/l). Effluent limitations for hardness-dependent metals are calculated as per the equations listed in *Chapter 1 of the Wyoming Water Quality Rules and Regulations, Appendix F*, utilizing a hardness of 400 mg/l C. The 400 mg/l CaCO<sub>3</sub> "default" hardness value is appropriate according to *Appendix F, Chapter 1, Wyoming Water Quality Rules and Regulations*, as the 183 hardness measurements taken by the United States Geological Survey between 1949 and 1981 at gauging station 06316400 indicate the average ambient hardness of Crazy Woman Creek is approximately 740 mg/l. The established effluent limits, as per EPA requirements, are based upon the most stringent value (acute or chronic) calculated for the most sensitive existing use. The established effluent limits also incorporate the state of Wyoming's antidegradation requirements, and consider the practical quantitation limits of the accepted laboratory methods for these constituents.

#### Waste Load Allocations

To determine effluent limits for all constituents other than dissolved sodium, TDS, and EC, which are based on ambient concentrations, the WYPDES Program used a standard wasteload allocation (WLA) formula (otherwise known as a mass balance equation) (see **Tables 1a – 1c**). The WLA further refines effluent limits by considering the estimated volume of the discharge, the ambient water quality within the drainage, and the low flow "worst-case scenario" by utilizing 7Q10 values in the calculations. The 7Q10 flow within the Crazy Woman Creek drainage has been calculated by the USGS to be 0.031 cubic feet per second (CFS) or 0.02 million gallons per day (MGD). Operators within the Crazy Woman Creek drainage have estimated a maximum total produced water discharge volume of 10.8 cfs, or 7 MGD, which is also considered in the WLA (see minutes of Crazy Woman Creek Watershed Based Permittee Committee meeting proceedings, available from the WYPDES CBM website). Because water from this facility will reach Crazy Woman on a continual basis, waste load allocations were calculated for non-persistent pollutants (dissolved iron, dissolved manganese, total radium 226, total radium 228, and

ammonia) as well as persistent pollutants. Wasteload allocation calculations outlined below take into consideration antidegradation provisions required under *Chapter 1 of the Wyoming Water Quality Rules and Regulations* to determine the final limits applicable to this permit

| <b>Table 1a: Wasteload Allocation Calculations, Crazy Woman Creek</b>  |                             |                            |                           |                               |                                  |  |                           |                    |
|--|-----------------------------|----------------------------|---------------------------|-------------------------------|----------------------------------|--|---------------------------|--------------------|
| <b>Parameter</b>   | <b>Low Flow, MGD (7Q10)</b> | <b>Discharge Rate, MGD</b> | <b>Combined Flow, MGD</b> | <b>Water Quality Standard</b> | <b>Background Con. (Ambient)</b> | <b>Assimilative Capacity of Stream</b> | <b>Allowable Standard</b> | <b>Limit (WLA)</b> |
| <b>Dissolved Iron, µg/l</b>  | 0.02                        | 6.98                       | 7.0                       | 1000                          | 20.0                             | 980.0                                  | 215                       | <b>215</b>         |
| <b>Total Arsenic, µg/l</b>   | 0.02                        | 6.98                       | 7.0                       | 7.0                           | 1.4                              | 5.6                                    | 2.5                       | <b>2.5</b>         |
| <b>Dissolved Cadmium, µg/l</b>   | 0.02                        | 6.98                       | 7.0                       | 5.0                           | 0.4                              | 4.6                                    | 1.3                       | <b>1.3</b>         |
| <b>Dissolved Zinc, µg/l</b>  | 0.02                        | 6.98                       | 7.0                       | 382.4                         | 5.5                              | 376.9                                  | 81                        | <b>81</b>          |
| <b>Dissolved Copper, µg/l</b>  | 0.02                        | 6.98                       | 7.0                       | 29.3                          | 3.4                              | 25.9                                   | 8.6                       | <b>8.6</b>         |
| <b>Dissolved Lead, µg/l</b>  | 0.02                        | 6.98                       | 7.0                       | 10.9                          | 0.1                              | 10.8                                   | 2.2                       | <b>2.2</b>         |
| <b>Chloride, mg/l,</b>   | 0.02                        | 6.98                       | 7.0                       | 230                           | 10.8                             | 219.2                                  | 54                        | <b>50</b>          |
| <b>Dissolved Fluoride, µg/l</b>  | 0.02                        | 6.98                       | 7.0                       | 4000                          | 4400.0                           | -400.0                                 | 4320.0                    | <b>4000*</b>       |
| <b>Total Recoverable Barium, µg/l</b>  | 0.02                        | 6.98                       | 7.0                       | 2000                          | 77.9                             | 1922.1                                 | 462                       | <b>460</b>         |
| <b>Total Recoverable Selenium, µg/l</b>  | 0.02                        | 6.98                       | 7.0                       | 5.0                           | 1.3                              | 3.7                                    | 2.0                       | <b>2.0</b>         |
| <b>Sulfate, mg/l</b>   | 0.02                        | 6.98                       | 7.0                       | 3000                          | 812.0                            | 2188.0                                 | 1249.6                    | <b>1240</b>        |
| *In instances where the calculated effluent limit is greater than the standard established in Chapter 1 of the Wyoming Water Quality Rules and Regulations, the effluent limit established in the permit is equal to the standard. |                             |                            |                           |                               |                                  |  |                           |                    |

| <b>Table 1b: Wasteload Allocation, Total Ammonia</b> |                      |                     |                    |                        |                           |                                 |                    |                   |
|--|----------------------|---------------------|--------------------|------------------------|---------------------------|---------------------------------|--------------------|-------------------|
| Parameter (mg/l)                                     | Low Flow, MGD (7Q10) | Discharge Rate, MGD | Combined Flow, MGD | Water Quality Standard | Background Con. (Ambient) | Assimilative Capacity of Stream | Allowable Standard | Limit (WLA), mg/l |
| <b>December-February</b>                             |                      |                     |                    |                        |                           |                                 |                    |                   |
| Ammonia (chronic)                                    | 0.0200               | 6.9800              | 7.0000             | 2.8000                 | 0.020                     | 2.780                           | 0.576              | <b>0.57</b>       |
| Ammonia (acute)                                      | 0.0200               | 6.9800              | 7.0000             | 10.1000                | 0.020                     | 10.080                          | 2.036              | <b>2.03</b>       |
| <b>March-May and September-November</b>              |                      |                     |                    |                        |                           |                                 |                    |                   |
| Ammonia (chronic)                                    | 0.0200               | 6.9800              | 7.0000             | 2.1000                 | 0.020                     | 2.080                           | 0.436              | <b>0.43</b>       |
| Ammonia (acute)                                      | 0.0200               | 6.9800              | 7.0000             | 6.9500                 | 0.020                     | 6.930                           | 1.406              | <b>1.40</b>       |
| <b>June-August</b>                                   |                      |                     |                    |                        |                           |                                 |                    |                   |
| Ammonia (chronic)                                    | 0.0200               | 6.9800              | 7.0000             | 1.7100                 | 0.020                     | 1.690                           | 0.358              | <b>0.35</b>       |
| Ammonia (acute)                                      | 0.0200               | 6.9800              | 7.0000             | 8.4000                 | 0.0200                    | 8.3800                          | 1.6960             | <b>1.69</b>       |

| <b>Table 1c: WLA pH and Temperature Data Characterization</b> |        |                   |  |
|---|--------|-------------------|--|
| Temperature, °Celsius   | Mean   | Number of Records | Period of Record                                 |
| <b>December-February</b>                                      | 0.0692 | 65                | 1966-1981, 1989, 2002-2005                       |
| <b>March-May</b>  | 10.001 | 90                | 1967-1982, 1989-2005                             |
| <b>June-August</b>  | 21.089 | 102               | 1967-2005  |
| <b>September-November</b>                                     | 10.031 | 85                | 1966-1992-2001-2005                              |
| pH, standard units  | Median | Number of Records | Period of Record                                 |
| <b>December-February</b>                                      | 7.9    | 52                | 1949, 1966-1974, 1977-1981, 1989, 2001-2005      |
| <b>March-May</b>  | 8.1    | 71                | 1950, 1967-1974, 1978-1981, 1989-1990, 1995-2005 |
| <b>June-August</b>  | 8      | 76                | 1950, 1967-1974, 1976-1981, 1988-1989, 1994-2005 |
| <b>September-November</b>                                     | 8.1    | 64                | 1950, 1966-1974, 1977-1981, 1988-1989, 2001-2005 |

Ammonia

In accordance with *Chapter 1 of the Wyoming Water Quality Rules and Regulations, Appendix C*, the ammonia limits being established in this permit are expressed in milligrams of ammonia nitrogen per liter (mg N/L), and consider the temperature and/or pH of the receiving stream and the discharge and the species of fish and life stages present. The portion of Crazy Woman Creek covered under this permit and the Powder River are not known to support populations of salmonid fish species. Therefore, the ammonia effluent limits being established in this permit do not incorporate limits protective of salmonid early life stages. Ammonia WLA effluent limit calculations and supporting information are presented in Tables 1b and 1c.

Manganese Impairment

Crazy Woman Creek has been identified by the USGS and the WDEQ as being impaired for dissolved manganese, and is included on the WDEQ's list of impaired waters, otherwise known as the 303(d) List of Waters Requiring TMDLs. The source of this impairment has not been identified, but is thought to be due to natural processes occurring within the stream channel. Currently, dissolved manganese effluent limits are not typically established in CBM discharge permits, due to low concentrations of this constituent within historic CBM discharges, and the non-persistent nature of this pollutant. Due to this impairment, a dissolved manganese limit of 50 µg/l is established in this permit, as discharges from this facility have the potential to impact Crazy Woman Creek water quality on a continual basis.

**Sodium Adsorption, Dissolved Sodium, Total Dissolved Solids, and Electrical Conductivity**

In order to comply with effluent limits established to be protective of the designated uses within Crazy Woman Creek and consistent with the numeric standards for specific conductance (EC) and sodium adsorption ratio (SAR) established by the State of Montana for the Powder River, this permit establishes end-of-pipe effluent limits for EC, total dissolved solids, and dissolved sodium. These effluent limits vary by month according to background water quality concentrations within Crazy Woman Creek and the Powder River. The background water quality concentrations were calculated using United States Geological Survey (USGS) water quality data from USGS station numbers 06324500 (Powder River at Moorhead) for the years 1990-2003 and 06316400 (Crazy Woman Creek at Upper Station near Arvada), all available data. These effluent limits are listed in Part I.A.1.a of the permit below. The permit requires that the operator sample and analyze at least monthly for dissolved sodium and specific conductance.

Ambient Crazy Woman Creek Water Quality

Water quality data from USGS station 06316400 (all available data) were compiled to characterize background Crazy Woman Creek water quality. This dataset was utilized in the calculation of Crazy Woman Creek ambient constituent concentrations and flow analyses. Because Crazy Woman Creek water quality in regards to EC, TDS, and dissolved sodium varies throughout the year, the WYPDES Program has established limits for EC, TDS, and dissolved sodium that vary on a monthly basis (See Table 2). In regards to EC and TDS, both monthly average and monthly median Crazy Woman Creek ambient concentrations were calculated. In order to establish limits that consider a degree of conservatism, the monthly concentrations for these constituents in Crazy Woman Creek are considered to be equal to the lower concentration obtained utilizing these two statistical methods.

### Irrigation Protection

Irrigation uses have been identified within the Crazy Woman Creek sub-basin of the Powder River drainage at numerous sites. The most saline-sensitive crop identified as being irrigated within the Crazy Woman Creek drainage is alfalfa. However, available historic water quality data for the Crazy Woman Creek drainage demonstrates that, on average, the ambient water quality within the Crazy Woman Creek drainage exceeds concentrations necessary to preserve optimum alfalfa yield. Therefore, limits established for the protection of irrigation uses within the Crazy Woman Creek General permit will be based upon historic monthly water quality. Monthly EC limits at the end-of-pipe are established based on monthly ambient water quality. Once the maximum EC concentration was calculated, the maximum SAR value was calculated using the Hanson Diagram. Using the calculated monthly EC effluent limits, a monthly sodium adsorption ratio effluent limit was derived from Figure 3 of the USDA “*Agricultural Salinity and Drainage*” handbook, Hanson et al., 1999 revision. The SAR limit in this permit is intended to prevent a reduction in soil permeability within the downstream irrigated areas along Crazy Woman Creek. To be consistent with the Powder River Assimilative Capacity process, the calculated SAR limits were then translated into dissolved sodium limits, using a calcium concentration of 168 mg/l and a magnesium concentration of 87 mg/l (determined by calculating average values for these constituents from USGS station 06316400 data, all available years). Preservation of historic ambient water quality in regards to EC, and establishment of SAR/dissolved sodium limits based upon the methods described in “*Agricultural Salinity and Drainage*”, (calculation of the maximum allowable SAR based upon irrigation water EC and “no reduction in infiltration”) will provide irrigators within the Crazy Woman Creek with irrigation water that will cause no reduction in crop yield.

*Interim and Final Effluent Limit Periods:* In order to provide the permittee with a window of opportunity to obtain assimilative capacity credits, this permit establishes an interim period during which effluent limits for EC, TDS, and dissolved sodium are based only upon protection of designated uses within Crazy Woman Creek. The interim period shall become effective upon issuance of this renewal and shall last through April 30, 2009. The final effluent limit period shall become effective on May 1, 2009 and shall remain in effect until the expiration of this permit, or until the permittee obtains assimilative capacity credits, and based on those credits, requests to modify the effluent limits in this permit. Final effluent limits for EC, TDS, and dissolved sodium are based on both protection of designated uses within Crazy Woman Creek as well as Powder River assimilative capacity. During the final effluent limit period, the more stringent effluent limit (between Crazy Woman Creek protection and Powder River protection) will apply. Interim and final effluent limits for EC, TDS, and dissolved sodium are outlined in Table 2 below (see footnote 8):

**Table 2 – Monthly EC, TDS, and Dissolved Sodium Effluent Limits**

| Month     | Crazy Woman Creek Monthly EC <sup>1</sup> (umhos/cm) | Powder River Monthly Ambient EC <sup>2</sup> (umhos/cm) | Crazy Woman Creek Monthly SAR <sup>3</sup> (ratio) | Crazy Woman Creek Monthly Dissolved Sodium <sup>4</sup> (mg/l) | Powder River Ambient Dissolved Sodium <sup>5</sup> (mg/l) | Crazy Woman Creek Monthly Ambient TDS <sup>6</sup> (mg/l) | Powder River Monthly Ambient TDS <sup>7</sup> (mg/l) | Final Permit Effluent Limits (effective October 1, 2008) <sup>8</sup> |                               |                  |
|-----------|--|---|--|--|---|---|--|---|-------------------------------|------------------|
|           |  |   |  |  |   |   |  | EC Limit (umhos/cm)   | Dissolved Sodium Limit (mg/l) | TDS Limit (mg/l) |
| January   | <b>1600</b>  | 1765  | 8.9  | <b>570</b>   | 212   | <b>1230</b>   | 1345   | 1600  | 212                           | 1230             |
| February  | <b>1470</b>  | 1895  | 8.0  | <b>513</b>   | 194   | <b>961</b>  | 1444   | 1470  | 194                           | 961              |
| March     | <b>1613</b>  | 1784  | 9.0  | <b>577</b>   | 186   | <b>1065</b>   | 1359   | 1613  | 186                           | 1065             |
| April     | <b>1639</b>  | 1524  | 9.2  | <b>590</b>   | 166   | <b>1070</b>   | 1161   | 1524  | 166                           | 1070             |
| May       | <b>1728</b>  | 1254  | 9.8  | <b>628</b>   | 202   | <b>1255</b>   | 956  | 1254  | 202                           | 956              |
| June      | <b>1649</b>  | 1129  | 9.2  | <b>590</b>   | 160   | <b>670</b>  | 860  | 1129  | 160                           | 670              |
| July      | <b>1475</b>  | 1797  | 8.0  | <b>513</b>   | 180   | <b>1550</b>   | 1369   | 1475  | 180                           | 1369             |
| August    | <b>2254</b>  | 2046  | 13.5   | <b>865</b>   | 250   | <b>1441</b>   | 1559   | 2046  | 250                           | 1441             |
| September | <b>2354</b>  | 2043  | 14.2   | <b>910</b>   | 237   | <b>1195</b>   | 1557   | 2043  | 237                           | 1195             |
| October   | <b>2050</b>  | 1822  | 12.1   | <b>775</b>   | 224   | <b>1195</b>   | 1388   | 1822  | 224                           | 1195             |
| November  | <b>1600</b>  | 1898  | 8.9  | <b>570</b>   | 213   | <b>1100</b>   | 1446   | 1600  | 213                           | 1100             |
| December  | <b>1790</b>  | 1945  | 10.2   | <b>654</b>   | 211   | <b>1260</b>   | 1482   | 1790  | 211                           | 1260             |

<sup>1</sup> Crazy Woman Creek monthly ambient EC concentrations based upon the lower of average or median concentrations, USGS data 06316400

<sup>2</sup> Powder River monthly ambient EC concentrations based upon USGS data, station 06324500 (Powder River at Moorhead) for the years 1990-2003

<sup>3</sup> Crazy Woman Creek monthly maximum allowable SAR derived from Figure 3 of the USDA "Agricultural Salinity and Drainage" handbook, Hanson et al., 1999 revision. The maximum allowable SAR values in this permit are intended to prevent a reduction in soil permeability within the downstream irrigated areas along Crazy Woman Creek.

<sup>4</sup> The calculated maximum allowable SAR values were translated into dissolved sodium values using a calcium concentration of 168 mg/l and a magnesium concentration of 87 mg/l (determined by calculating average values for these constituents from USGS station 06316400 data, all available years); SAR =  $\text{Na}/(((\text{Ca}+\text{Mg})/2)^{0.5})$

<sup>5</sup> Powder River monthly ambient dissolved sodium concentrations based upon USGS data, station 06324500 (Powder River at Moorhead) for the years 1990-2003

<sup>6</sup> Crazy Woman Creek monthly ambient TDS concentrations based upon the lower of average or median concentrations, USGS data 06316400

<sup>7</sup> Powder River ambient TDS calculated using 0.762 EC=TDS conversion factor

<sup>8</sup> Final effluent limits represent the more stringent concentration between Crazy Woman Creek and the Powder River by month. Final effluent limits become effective May 1, 2009. Permittee has interim period in which effluent limits established based on protection of Crazy Woman Creek data alone (numbers shown in bold represent interim period effluent limits). Interim period is provided to allow permittee to obtain assimilative capacity credits and is effective between the issuance of this renewal and April 30, 2009.

### **Monitoring and Reporting**

Results are to be reported twice-yearly and if no discharge occurs at a given outfall for an entire sampling period, then "no discharge" is to be reported for that outfall during that period. The permit also requires that an initial monitoring of the effluent be conducted within the first 60 days of discharge following issuance of this renewal, and the results submitted to WDEQ and the U.S. Environmental Protection Agency within 120 days of the commencement of discharge.

The permit also requires sampling at designated water quality monitoring stations located on the mainstem (Crazy Woman Creek). Water quality monitoring stations on Crazy Woman Creek will be located upstream and downstream of this facility (See UCWC, DCWC stations in Table 1 of the permit). Effluent samples at the designated water quality monitoring stations must be collected on a monthly sampling basis and are to be reported semiannually. If no flow occurs at the permitted outfall(s) for an entire sampling month, then "no discharge" is to be reported and samples need not be collected at the two mainstem water quality monitoring stations for that monthly sampling period. At the designated water quality monitoring stations, monitoring will be required for temperature, calcium, magnesium, sodium, sodium adsorption ratio, specific conductance, and total flow. Information gathered from the water quality monitoring stations may result in modification of the permit to protect existing uses on the tributary and 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 June 30, 2011, 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. Having all permits in the drainage expire at the same time will allow for basin-wide analysis of impacts due to these discharges upon renewal of these permits, and will allow the WDEQ to adopt a more holistic, watershed-based permitting approach.

Carrie Ferguson - Renewal  
Water Quality Division  
Department of Environmental Quality  
Drafted: February 20, 2008

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,

Pauper's Dream Company,

is authorized to discharge from the wastewater treatment facilities serving the

West Esponda Water Treatment Facility,

located in

NENE, SWNE, and NESE of Section 11, Township 49 North, Range 80 West, all in Johnson County,

to receiving waters named

following treatment, the produced water will be discharged directly to Crazy Woman Creek (class 2AB) which is tributary to the Powder River (class 2ABWW),


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

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

This permit and the authorization to discharge shall expire at midnight, June 30, 2011.

  
\_\_\_\_\_  
John F. Wagner  
Administrator - Water Quality Division

5/14/08  
Date

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

5/15/08  
Date

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effective **immediately** and lasting through June 30, 2011, 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 serial numbers 001-003.

**1a. From the date of permit renewal issuance until midnight, April 30, 2009, the following interim effluent limits are established for all permitted outfalls:**

Effluent Limits By Month

| Month     | Daily Maximum, Outfall              |                         |                               |
|-----------|-------------------------------------|-------------------------|-------------------------------|
|           | Specific Conductance (micromhos/cm) | Dissolved Sodium (mg/l) | Total Dissolved Solids (mg/l) |
| January   | 1600                                | 570                     | 1230                          |
| February  | 1470                                | 513                     | 961                           |
| March     | 1613                                | 577                     | 1065                          |
| April     | 1639                                | 590                     | 1070                          |
| May       | 1728                                | 628                     | 1255                          |
| June      | 1649                                | 590                     | 670                           |
| July      | 1475                                | 513                     | 1550                          |
| August    | 2254                                | 865                     | 1441                          |
| September | 2354                                | 910                     | 1195                          |
| October   | 2050                                | 775                     | 1195                          |
| November  | 1600                                | 570                     | 1100                          |
| December  | 1790                                | 654                     | 1260                          |

Effluent Limits Applicable During All Months

| <u>Effluent Characteristic</u> | <u>Daily Maximum, Outfall</u> |
|--------------------------------|-------------------------------|
| Chloride, mg/l                 | 50                            |
| pH, standard units             | 6.5 – 9.0                     |
| Total Arsenic, µg/l            | 2.5                           |
| Total Barium, µg/l             | 460                           |
| Total Flow, MGD*               | 1.68                          |
| Dissolved Iron, µg/l           | 215                           |

| <u>Effluent Characteristic</u>  | <u>Daily Maximum, Outfall</u> |
|---|-------------------------------|
| <b>Total Recoverable Radium 226 + Total Recoverable Radium 228 (pCi/l)</b>  | 1                             |
| <b>Sulfate, mg/l</b>  | 1240                          |
| <b>Dissolved Cadmium, µg/l</b>  | 1.3                           |
| <b>Dissolved Lead, µg/l</b>   | 2.2                           |
| <b>Dissolved Copper, µg/l</b>   | 8.6                           |
| <b>Dissolved Manganese, µg/l</b>  | 50                            |
| <b>Total Recoverable Selenium, µg/l</b>                                     | 2.0                           |
| <b>Dissolved Zinc, µg/l</b>   | 80                            |
| <b>Ammonia, mg/l as total N (Dec.-Feb, daily maximum)</b>                   | 2.03                          |
| <b>Ammonia, mg/l as total N (Dec.-Feb., monthly average)</b>                | 0.57                          |
| <b>Ammonia, mg/l as total N (March-May and Sept.-Nov, daily maximum)</b>    | 1.40                          |
| <b>Ammonia, mg/l as total N (March-May and Sept.-Nov., monthly average)</b> | 0.43                          |
| <b>Ammonia, mg/l as total N (June-Aug., daily maximum)</b>                  | 1.69                          |
| <b>Ammonia, mg/l as total N (June-Aug., monthly average)</b>                | 0.35                          |

\*Total flow volume will be calculated as the sum of all discharge from all permitted outfalls.

**1b. Between May 1, 2009 and June 30, 2011, the following final effluent limits are established for all permitted outfalls:**

**Effluent Limits By Month**

| <b>Month</b>    | <b>Daily Maximum, Outfall</b>              |                                |                                      |
|-----------------|--|--------------------------------|--------------------------------------|
|                 | <b>Specific Conductance (micromhos/cm)</b> | <b>Dissolved Sodium (mg/l)</b> | <b>Total Dissolved Solids (mg/l)</b> |
| <b>January</b>  | 1600                                       | 212                            | 1230                                 |
| <b>February</b> | 1470                                       | 194                            | 961                                  |
| <b>March</b>    | 1613                                       | 186                            | 1065                                 |
| <b>April</b>    | 1524                                       | 166                            | 1070                                 |
| <b>May</b>      | 1254                                       | 202                            | 956                                  |
| <b>June</b>     | 1129                                       | 160                            | 670                                  |

| Month     | Daily Maximum,<br>Outfall              |                         |                                  |
|-----------|--|-------------------------|----------------------------------|
|           | Specific Conductance<br>(micromhos/cm) | Dissolved Sodium (mg/l) | Total Dissolved Solids<br>(mg/l) |
| July      | 1475                                   | 180                     | 1369                             |
| August    | 2046                                   | 250                     | 1441                             |
| September | 2043                                   | 237                     | 1195                             |
| October   | 1822                                   | 224                     | 1195                             |
| November  | 1600                                   | 213                     | 1100                             |
| December  | 1790                                   | 211                     | 1260                             |

**Effluent Limits Applicable During All Months**

| <b><u>Effluent Characteristic</u></b>                                | <b><u>Daily Maximum,<br/>Outfall</u></b> |
|--|--|
| Chloride, mg/l   | 50                                       |
| pH, standard units   | 6.5 – 9.0                                |
| Total Arsenic, µg/l  | 2.5                                      |
| Total Barium, µg/l   | 460                                      |
| Total Flow, MGD*   | 1.68                                     |
| Dissolved Iron, µg/l   | 215                                      |
| Total Recoverable Radium 226 + Total Recoverable Radium 228 (pCi/l)  | 1  |
| Sulfate, mg/l  | 1240                                     |
| Dissolved Cadmium, µg/l  | 1.3                                      |
| Dissolved Lead, µg/l   | 2.2                                      |
| Dissolved Copper, µg/l   | 8.6                                      |
| Dissolved Manganese, µg/l  | 50                                       |
| Total Recoverable Selenium, µg/l                                     | 2.0                                      |
| Dissolved Zinc, µg/l   | 80                                       |
| Ammonia, mg/l as total N (Dec.-Feb, daily maximum)                   | 2.03                                     |
| Ammonia, mg/l as total N (Dec.-Feb., monthly average)                | 0.57                                     |
| Ammonia, mg/l as total N (March-May and Sept.-Nov, daily maximum)    | 1.40                                     |
| Ammonia, mg/l as total N (March-May and Sept.-Nov., monthly average) | 0.43                                     |

| <u>Effluent Characteristic</u>                        | <u>Daily Maximum, Outfall</u> |
|---|-------------------------------|
| Ammonia, mg/l as total N (June-Aug., daily maximum)   | 1.69                          |
| Ammonia, mg/l as total N (June-Aug., monthly average) | 0.35                          |

\*Total flow volume will be calculated as the sum of all discharge from all permitted outfalls.

**1c. The following additional permit requirements are established for all permitted outfalls for the entire term that this permit is effective:**

In order to meet the end of pipe effluent limits for dissolved sodium and specific conductance described above, the effluent must be treated prior to discharge. Any storage of concentrated waste generated from the treatment unit(s) must occur outside of any waters of the state. In addition, the construction and operation of a treatment unit at this facility will require acquisition of a permit to construct in accordance with Chapter 3 of the Wyoming Water Quality Rules and Regulations. Prior to addition of any chemicals to the treatment, pre-treatment, or post-treatment processes (flocculants, surfactants, anti-scalants, sterilants, etc.), written authorization must be obtained from the WYPDES Program. Addition of chemicals to the treatment process without prior written authorization from the WYPDES program will constitute a violation of this permit.

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

This facility has a total combined daily maximum flow rate of 1.68 million gallons per day (MGD).

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.

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

a. Monitoring of the initial discharge

Within 60 days of commencement of discharge following issuance of this permit modification, 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 following issuance of this permit modification, 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 routine monitoring requirements described in Parts I.A.7.b. and I.A.7.c. may be modified to require more stringent monitoring.

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

| <b><u>Parameter*</u></b> (See notes following the table on chemical states) | <b><u>Required Detection Limits and Required Units</u></b> |
|---|--|
| Sodium, Dissolved   | 100 µg/l, report as mg/l                                   |
| Specific Conductance  | 5 micromhos/cm   |
| Sulfates  | 10 mg/l  |
| Zinc, Dissolved   | 50 µg/l  |

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)

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.

| <b><u>Parameter</u></b>                              | <b><u>Measurement Frequency</u></b> | <b><u>Sample Type</u></b> |
|--|-------------------------------------|---------------------------|
| <b>Total Alkalinity</b> (mg/l as CaCO <sub>3</sub> ) | Monthly                             | Grab                      |
| <b>Ammonia</b> (total N as mg/l)                     | Once per week                       | Grab                      |
| <b>Bicarbonate</b> (mg/l)                            | Monthly                             | Grab                      |
| <b>Dissolved Cadmium</b> (µg/l)                      | Annually                            | Grab                      |
| <b>Dissolved Calcium</b> (mg/l)                      | Monthly                             | Grab                      |
| <b>Chloride</b> (mg/l)                               | Annually                            | Grab                      |

| <b><u>Parameter</u></b>   | <b><u>Measurement Frequency</u></b> | <b>Sample Type</b>                               |
|---|-------------------------------------|--|
| <b>Dissolved Copper</b> (µg/l)  | Annually                            | Grab   |
| <b>Dissolved Iron</b> (µg/l)  | Quarterly                           | Grab   |
| <b>Dissolved Lead</b> (µg/l)  | Annually                            | Grab   |
| <b>Dissolved Magnesium</b> (mg/l)   | Monthly                             | Grab   |
| <b>Dissolved Manganese</b> (mg/l)   | Annually                            | Grab   |
| <b>pH</b> (standard units)  | Monthly                             | Grab   |
| <b>Total Radium 226</b> (pCi/l)   | Quarterly                           | Grab   |
| <b>Total Radium 228</b> (pCi/l)   | Quarterly                           | Grab   |
| <b>Total Recoverable Selenium</b> (µg/l)  | Annually                            | Calculated (as unadjusted for bicarbonate ratio) |
| <b>Dissolved Sodium</b> (mg/l)  | Monthly                             | Grab   |
| <b>Sodium Adsorption Ratio</b> (calculated as unadjusted for bicarbonate ratio) | Monthly                             | Grab   |
| <b>Total Dissolved Solids</b> (mg/l)  | Monthly                             | Grab   |
| <b>Specific Conductance</b> (micromohs/cm)                                      | Monthly                             | Grab   |
| <b>Total Recoverable Arsenic</b> (µg/l)   | Annually                            | Grab   |
| <b>Total Recoverable Barium</b> (µg/l)  | Quarterly                           | Grab   |
| <b>*Total Flow</b> – (MGD)  | Monthly                             | Continuous                                       |
| <b>Temperature</b> , degrees Celsius  | Monthly                             | Grab   |
| <b>Dissolved Zinc</b> (µg/l)  | Annually                            | Grab   |
| <b>Sulfate</b>  | Annually                            | Grab   |

\* Total Flow at the outfall will be measured continuously and the data will be compiled by the permittee in order to report in the semi-annually submitted DMR's a monthly average value (average of all flow readings for a given month) as well as a daily maximum value (highest single flow reading for that month).

\*\*Temperature at the end of pipe will be measured continuously and the data will be compiled by the permittee in order to report the following values in the semi-annually submitted DMR's:

- 1) monthly average value (average of all temperature readings for a given month)
- 2) daily maximum value (highest single temperature reading for that month)
- 3) daily minimum value (lowest single temperature reading for that month)

c. Water Quality Monitoring Stations (UCWC and DCWC)

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>    |
|--|------------------------------|-----------------------|
| Flow – (MGD)*  | Monthly                      | Instantaneous Maximum |
| Flow – (MGD)*  | Monthly                      | Continuous Average    |
| Dissolved Sodium (mg/l)                                  | Monthly                      | Grab                  |
| Dissolved Calcium (mg/l)                                 | Monthly                      | Grab                  |
| Dissolved Magnesium (mg/l)                               | Monthly                      | Grab                  |
| Specific Conductance (micromohs/cm)                      | Monthly                      | Grab                  |
| Alkalinity (mg/l as CaCO <sub>3</sub> )                  | Monthly                      | Grab                  |
| Bicarbonate (mg/l)                                       | Monthly                      | Grab                  |
| Sodium Adsorption Ratio (calculated as unadjusted ratio) | Monthly                      | Grab                  |
| pH (standard units)                                      | Monthly                      | Grab                  |
| Temperature (degrees C)**                                | Monthly Average              | Continuous            |
| Temperature (degrees C)**                                | Daily Maximum                | Continuous            |
| Temperature (degrees C)**                                | Daily Minimum                | Continuous            |
| Sulfate (mg/l)   | Monthly                      | Grab                  |

\*At the Crazy Woman Creek monitoring stations (UCWC and DCWC), total flow will be measured continuously and the data will be compiled by the permittee in order to report a monthly average value (average of all flow readings for a given month) as well as a daily maximum value (highest single flow reading for that month).

\*\* Temperature at the established water quality monitoring stations will be measured continuously and the data will be compiled by the permittee in order to report the following values in the semi-annual DMRs:

- 13.2.1. monthly average value (average of all temperature readings for a given month)
- 13.2.2. daily maximum value (highest single temperature reading for that month)
- 13.2.3. daily minimum value (lowest single temperature reading for that month)

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): designated water quality monitoring stations are located in the main channel of Crazy Woman Creek, upstream and downstream of this facility. Legal locations of these water quality monitoring stations (UCWC and DCWC) are specified in Table 1 below. Established water quality monitoring stations on the mainstem are to be located outside the mixing zone with the facility and the mainstem. Results are to be reported semiannually and if no effluent from this facility is discharged from any permitted outfall during an entire sampling month, then "no discharge" is to be reported and samples need not be collected at the three water quality monitoring stations for that monthly sampling 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 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. If required, whole effluent toxicity testing (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 issuance of this permit is due on August 15<sup>th</sup>, 2008.

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.

In order for the permit not to be subjected to additional public notice, the location of the established discharge point must be 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. The permittee shall provide written notification of the establishment of each discharge point in accordance with Part I.A.7.a above.

12. Location of Discharge Points

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

SEE TABLE 1 FOR A LIST OF OUTFALLS

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 MONITORING STATIONS

Note: All CBM wells at this facility are permitted to discharge to any of the below listed outfalls.

**Table 1: WY0054640 West CBM Water Treatment Facility**

| Out-fall | Qtr/Qtr | SEC-TION | TWP (N) | RNG (W) | LATITUDE | LONGITUDE  | Drainage / Description                              |
|----------|---------|----------|---------|---------|----------|------------|---|
| 001      | NENE    | 11       | 49      | 80      | 44.23875 | -106.44231 | Crazy Woman Creek via discharge from treatment unit |
| 002      | SWNE    | 11       | 49      | 80      | 44.23477 | -106.44610 | Crazy Woman Creek via discharge from treatment unit |
| 003      | NESE    | 11       | 49      | 80      | 44.23027 | -106.44164 | Crazy Woman Creek via discharge from treatment unit |
| DCWC     | NENE    | 30       | 52      | 78      | 44.49970 | -106.12030 | Downstream Crazy Woman Creek monitoring station     |
| UCWC     | SWSE    | 17       | 51      | 79      | 44.47470 | -106.13790 | Upstream Crazy Woman Creek monitoring station       |

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 WDQ.

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.

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.

PART IIA. MANAGEMENT REQUIREMENTS1. 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, Watershed Management Section, NPDES 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, NPDES 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 IIIA. OTHER REQUIREMENTS1. 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.