



The State  
of Wyoming

## Department of Environmental Quality

Dave Freudenthal, Governor

152 N. Durbin Street • Suite 100 • Casper, Wyoming 82601



John Corra, Director

### NOTIFICATION OF COVERAGE

January 24, 2007

Richard Franke  
P.O. Box 326  
Moorcroft, WY 82721

RE: Franke Residential Septic System, Crook County  
Permit # 06-851

Dear Mr. Franke:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Small Wastewater Facility in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O, of the general permit.

Additionally, the following project specific conditions also apply:

- A. Clean-out – A clean out will be required at any change in pipe alignment of **22 ½° or greater**. Based on the drawing submitted with the application, clean outs will need to be installed at the bend between the shed and the septic tank, and at the two bends between the house and the septic tank.

Page 1 of 2

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If you have any questions please contact Kim J. Medina at 152 North Durbin Street, Suite 100, Casper, WY, 82601, or at (307) 473-3476. Thank you.

Sincerely,



Kim J. Medina  
Senior Environmental Analyst  
DEQ/WQD

Enclosures: General Permit  
Certificate of Completion

cc: IPS, Cheyenne  
Tim Lyons, Crook County, P.O. Box 37, Sundance, WY 82729

WYOMING  
PUBLIC WATER  
SYSTEMS  
/ASST



# Department of Environmental Quality



To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

## NOTIFICATION OF COVERAGE

January 9, 2007

MS Barbara L. Cabot, Environmental Manager  
Dyno Nobel, Cheyenne Plant  
8305 Otto Road  
Cheyenne, WY 82009,

RE: Cheyenne Plant Ammonium Nitrate Expansion, Application No. **06-852**, Laramie County

Dear MS Cabot:

The above application for coverage under General Permit to Construct, Install, Modify or Operate Extensions to or Modifications of Existing Sewage Collection Systems described as Cheyenne Plant Ammonium Nitrate Expansion, Application No. **06-852**, Laramie County, in accordance with Chapter 3, Section 9 of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install or modify the sewage collection system in accordance with Chapter 11, Section 9 of the Water Quality Division Rules and Regulations, the general permit and the materials submitted in your application package. All construction, installation, or modification allowed by this notification of coverage shall be completed by May 10, 2009.

Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O of the general permit. Please reference Application No. 06-852 in any future correspondence.

If you have any questions, please contact me at 307-777-7088.

Sincerely,

Louis B. Harmon PE-PG  
Southeast District Engineer  
Water Quality Division

cc: IPS, Cheyenne

Mr. Ronald Long  
Harris Group, Inc  
1100 Spring Street NW, Suite 800  
Atlanta GA 30309

LBH/rm/7-0018



WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
PERMIT TO CONSTRUCT

PERMIT NO. 06-853

City of Cody's Lane Drive 8-inch PVC Cured-in-Place Sanitary Sewer Liner

This permit hereby authorizes the applicant:

Roger Sedam, Mayor  
City of Cody  
P.O. Box 2200  
Cody, WY 82414

to install approximately 537 linear feet of 8-inch PVC cured-in-place sewer pipe liner within deteriorated 8-inch clay tile pipe; according to the procedures and conditions of the application number 06-853. The facility is located within SW  $\frac{1}{4}$ , Section 31, Township 53 North and Range 101 West in the county of Park, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by January 30, 2009.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

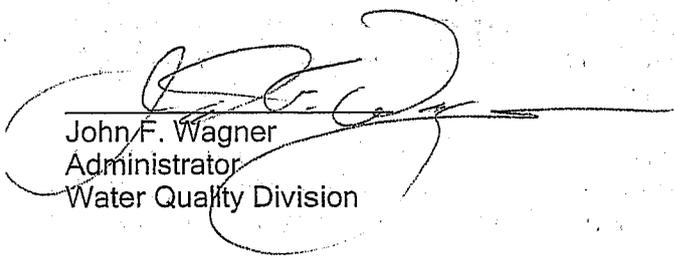
The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

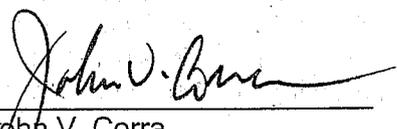
The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 3 The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Northwest District Engineer, 510 Meadowview Drive, Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 3 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
- a. Date that construction of the facility was completed; and
  - b. Date that the facility was placed in operation; and
  - c. Certification the facility was constructed in accordance with the terms and conditions of the permit; or
  - d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 3 of 3 The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:

  
John F. Wagner  
Administrator  
Water Quality Division

  
John V. Corra  
Director  
Department of Environmental Quality

3/6/07  
Date of Issuance

JSB/rm/7-0094  
ARK 3/5/7

## STATEMENT OF BASIS

1. Permit Number: 06-853
2. Application reviewed for compliance with the following regulations:  
Chapters 3, and 11 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above?  
Yes
4. Facilities include components not specifically covered by regulations and approval is based upon a deviation from applicable regulations in accordance with Section 5 of applicable regulations.  
Yes. Sewer relining is not covered by Water Quality's regulations nor is there a policy on design and construction. A video log of the project main was performed in 2003. The city engineer used this video log to verify the host pipe was in suitable condition for relining. The contractor will perform another video evaluation prior to and after installing the liner. The city engineer stated in the submittal application that the project main has no capacity problems and that this project should improve the hydraulic characteristics of this sewer main.
5. If Section 17 of Chapter 3 review is required indicate the basis for determining groundwater will be protected.  
Sewerage systems are exempted from review by Chapter 3, Section 17.
6. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

## CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by James S. Brough, jbroug@state.wy.us, Environmental Engineer and completed on January 29, 2007. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

Cc: Stephen Payne, P.E., City of Cody, P.O. Box 2200, Cody, WY 82414

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
PERMIT TO CONSTRUCT

PERMIT NO. 06-853

City of Cody's Lane Drive 8-inch PVC Cured-in-Place Sanitary Sewer Liner

This permit hereby authorizes the applicant:

Roger Sedam, Mayor  
City of Cody  
P.O. Box 2200  
Cody, WY 82414

to install approximately 537 linear feet of 8-inch PVC cured-in-place sewer pipe liner within deteriorated 8-inch clay tile pipe; according to the procedures and conditions of the application number 06-853. The facility is located within SW ¼, Section 31, Township 53 North and Range 101 West in the county of Park, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by January 30, 2009.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

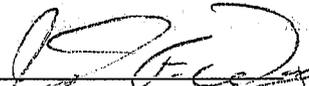
The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 3 The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Northwest District Engineer, 510 Meadowview Drive, Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
  
- 2 of 3 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
  - a. Date that construction of the facility was completed; and
  - b. Date that the facility was placed in operation; and
  - c. Certification the facility was constructed in accordance with the terms and conditions of the permit; or
  - d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
  
- 3 of 3 The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:

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

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

1/31/07  
Date of Issuance

ARS 1/30/7  
JSB/rm/7-0094

## STATEMENT OF BASIS

1. Permit Number: 06-853
2. Application reviewed for compliance with the following regulations:  
Chapters 3, and 11 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above?  
Yes
4. Facilities include components not specifically covered by regulations and approval is based upon a deviation from applicable regulations in accordance with Section 5 of applicable regulations.  
Yes. Sewer relining is not covered by Water Quality's regulations nor is there a policy on design and construction. A video log of the project main was performed in 2003. The city engineer used this video log to verify the host pipe was in suitable condition for relining. The contractor will perform another video evaluation prior to and after installing the liner. The city engineer stated in the submittal application that the project main has no capacity problems and that this project should improve the hydraulic characteristics of this sewer main.
5. If Section 17 of Chapter 3 review is required indicate the basis for determining groundwater will be protected.  
Sewerage systems are exempted from review by Chapter 3, Section 17.
6. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

## CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by James S. Brough, [jbroug@state.wy.us](mailto:jbroug@state.wy.us), Environmental Engineer and completed on January 29, 2007. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

Cc: Stephen Payne, P.E., City of Cody, P.O. Box 2200, Cody, WY 82414

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
PERMIT TO CONSTRUCT

PERMIT NO. 06-854R

Big Horn Regional Northern Supply Pipeline Project - Elements 9, 2, & 6

This permit hereby authorizes the applicant:

John Joyce, Project Director  
Big Horn Regional Joint Powers Board  
1100 North 10<sup>th</sup> Street  
Worland, WY 82401

to construct approximately 15.5 miles of 12-inch through 16-inch FRP and PVC water mains, East Basin Tanks (two 40 KG), Basin Gardens PRV Station, Lane 38 PRV Station, Greybull Tank's Control Valve Vault, West River Road PRV & Pump Station, and Rattlesnake Ridge Tank (1.0 MG); according to the procedures and conditions of the application number 06-854R. The facility is located within Townships 47 through 52 North and Ranges 92 and 93 West in the counties of Big Horn and Washakie, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed by March 26, 2010.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

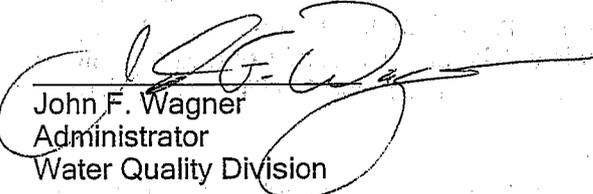
The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

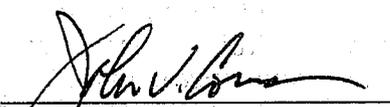
The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 3      The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality, Water Quality Division (WQD), Northwest District Engineer, 510 Meadowview Drive, Lander, WY 82520, 307-332-3144, FAX 307-332-3183, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 3      Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northwest District a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
- a.      Date that construction of the facility was completed; and
  - b.      Date that the facility was placed in operation; and
  - c.      Certification the facility was constructed in accordance with the terms and conditions of the permit; or
  - d.      Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 3 of 3      The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".

AUTHORIZED BY:

  
John F. Wagner  
Administrator  
Water Quality Division

  
John V. Corra  
Director  
Department of Environmental Quality

5/16/07  
Date of Issuance

AR 516-7  
JSB/rm/7-0404

## STATEMENT OF BASIS

1. Permit Number: 06-854R
2. Application reviewed for compliance with the following regulations:  
Chapters 3 and 12 of the Wyoming Water Quality Rules and Regulations.
3. Does the permit comply with all applicable regulations identified above?  
Yes
4. Facilities include components not specifically covered by regulations and approval is based upon a deviation from applicable regulations in accordance with Section 5 of applicable regulations.  
No
5. If Section 17 of Chapter 3 review is required indicate the basis for determining groundwater will be protected.  
Public water systems are exempted from review by Chapter 3, Section 17.
6. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

## CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by James S. Brough, [jbroug@state.wy.us](mailto:jbroug@state.wy.us), Environmental Engineer and completed on March 26, 2007. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents permit conditions, and the items identified in this "Statement of Basis."

Cc: Mark Hines, HKM Engineering Inc., P.O. Box 7010, Sheridan, WY 82801

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WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
"AS-BUILT" PERMIT TO CONSTRUCT

PERMIT NO. 06-856

Big Corral Jewel Draw Unit Additions 1 POD: E22-10-5378

This permit hereby authorizes the applicant:

Lance Oil and Gas Company  
Attn.: Mr. James Alsop  
1400 N. Lincoln  
Gillette, WY 82716

to have installed one compliance monitoring well according to the procedures and conditions of the application number 06-856. The facilities are proximal to coalbed methane produced water impoundments located in Township 53N, Range 78W, Section 10 in the county of Campbell, in the State of Wyoming. All construction, installation, or modification allowed by this permit has been completed.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

The permittee shall operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit

does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

1 of 3: The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality/ Water Quality Division, Groundwater Program, 1866 South Sheridan Avenue, Sheridan, WY 82801, 307-673-9337, fax 307-672-2213, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.

2 of 3: The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality/ Water Quality Division, Groundwater Program, 1866 South Sheridan Avenue, Sheridan, WY 82801, 307-673-9337, fax 307-672-2213 when discharge to each impoundment covered under this permit commences.

3 of 3: Monitoring Requirements:

Groundwater monitoring at the impoundments shall be performed on a quarterly basis until further notice and shall include the following information:

- Measurement of static water level and sampling and analysis of groundwater at downgradient well MW22-10.
- Reporting results of quarterly monitoring and sampling need to be at the department by January 15<sup>th</sup>, April 15<sup>th</sup>, July 15<sup>th</sup>, and October 15<sup>th</sup> of each year. The first set of data will be due by July 15<sup>th</sup>, 2007..

The parameters listed in the tables below are required for groundwater compliance monitoring beneath the listed impoundments:

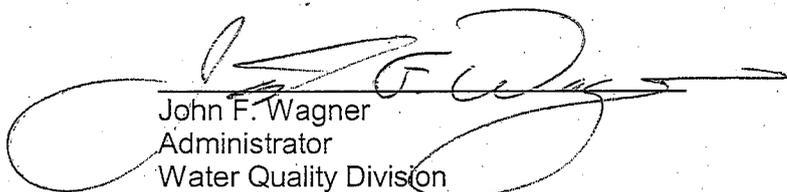
**Impoundment E22-10-5378**

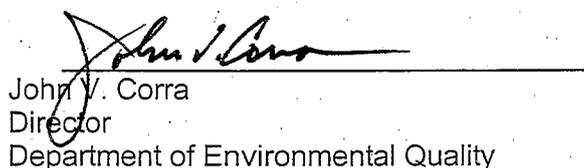
Parameter	MW22-10 Background Value (mg/L) (05/17/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2100	≥ 2400	3000
Total Dissolved Solids (TDS)	3120	≥ 4000	5000
pH	8.2	≤ 6.5	6.5 – 8.5 (s.u)

Trigger values, specific to the groundwater samples at each impoundment, have been assigned to each constituent and are also listed above. If one or more of these trigger values is exceeded during a quarterly sampling event, monthly sampling of the groundwater for all listed parameters is required, with the analytical results due by the 15<sup>th</sup> day of each month. If groundwater monitoring reveals a pH measurement of 6.5 or less, the WDEQ may require sampling and analysis of groundwater for the following additional parameters: aluminum, boron, cadmium, chromium, copper, lead and zinc.

The analytical results for each sampling event, along with impoundment and monitor well location information must be submitted in the Excel spread sheet "Compliance Monitoring Data Reporting", which can be found on the WDEQ website at the following address: (<http://deq.state.wy.us/wqd/groundwater/pollution.asp>). These data shall be submitted electronically on the due dates established above to the following department address: [cbmgroundwater@state.wy.us](mailto:cbmgroundwater@state.wy.us). In addition, the accompanying analytical laboratory reports must also be submitted either electronically (pdf format) or hard copy via mail to the WDEQ, Sheridan office at the address listed above.

AUTHORIZED BY:

  
John F. Wagner  
Administrator  
Water Quality Division

  
John V. Corra  
Director  
Department of Environmental Quality

3/5/07  
Date of Issuance

WDF/rm/7-0180

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
"AS-BUILT" PERMIT TO CONSTRUCT

PERMIT NO. 06-857

POWDER VALLEY UNIT, BARBER CREEK CBM FACILITY: MULTIPLE RESERVOIRS

This permit hereby authorizes the applicant:

Lance Oil and Gas Company  
Attn.: Mr. James Alsop  
1400 N. Lincoln  
Gillette, WY 81716

to have installed six compliance monitoring wells according to the procedures and conditions of the application number 06-857. The facilities are proximal to coalbed methane produced water impoundments located in Township 53N, Range 78W, Sections 9, 10, 16, and 21 in the county of Johnson, in the State of Wyoming. All construction, installation, or modification allowed by this permit has been completed.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

The permittee shall operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit

does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

1 of 3: The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality/ Water Quality Division, Groundwater Program, 1866 South Sheridan Avenue, Sheridan, WY 82801, 307-673-9337, fax 307-672-2213, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.

2 of 3: The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality/ Water Quality Division, Groundwater Program, 1866 South Sheridan Avenue, Sheridan, WY 82801, 307-673-9337, fax 307-672-2213 when discharge to each impoundment covered under this permit commences.

3 of 3: Monitoring Requirements:

Groundwater monitoring at the impoundments shall be performed on a quarterly basis until further notice and shall include the following information:

Measurement of static water level and sampling and analysis of groundwater at downgradient wells: MW43-9RB, MW33-10JF, MW12-16RW, MW12-16, MW23-16, and WMW21-21.

Reporting results of quarterly monitoring and sampling need to be at the department by January 15<sup>th</sup>, April 15<sup>th</sup>, July 15<sup>th</sup>, and October 15<sup>th</sup> of each year. The first set of data will be due by **January 15, 2008**.

The parameters listed in the tables below are required for groundwater compliance monitoring beneath the listed impoundments:

**Red Baron Impoundment**

Parameter	Monitor Well MW43-9RB Background Value (mg/L) (06/27/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2150	≥ 2400	3000
Total Dissolved Solids (TDS)	3380	≥ 4000	5000
pH	8.2	≤ 6.5	6.5 – 8.5 (s.u)

### Josephine Ford Impoundment

Parameter	Monitor Well MW33-10JF Background Value (mg/L) (06/27/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2500	≥ 2750	3000
Total Dissolved Solids (TDS)	3890	≥ 4000	5000
pH	8.2	≤ 6.5	6.5 – 8.5 (s.u)

### Red Wing Impoundment

Parameter	Monitor Well MW12-16RW Background Value (mg/L) (06/23/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	741	≥ 2400	3000
Total Dissolved Solids (TDS)	1700	≥ 4000	5000
pH	8.6	≤ 6.5	6.5 – 8.5 (s.u)

### Glamorous Glennis Impoundment

Parameter	Monitor Well MW12-16 Background Value (mg/L) (06/22/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2400	≥ 2700	3000
Total Dissolved Solids (TDS)	4260	≥ 4630	5000
pH	8.2	≤ 6.5	6.5 – 8.5 (s.u)

### Blue Angels Impoundment

Parameter	Monitor Well MW23-16 Background Value (mg/L) (06/22/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2140	≥ 2400	3000
Total Dissolved Solids (TDS)	3340	≥ 4000	5000
pH	8.3	≤ 6.5	6.5 – 8.5 (s.u)

### Spruce Goose Impoundment

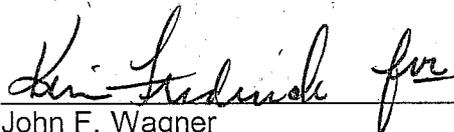
Parameter	Monitor Well MW21-21 Background Value (mg/L) (06/21/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	6	≥ 2400	3000
Total Dissolved Solids (TDS)	710	≥ 4000	5000
pH	8.8	≤ 6.5	6.5 – 8.5 (s.u)

Trigger values, specific to the groundwater samples at each impoundment, have been assigned to each constituent and are also listed above. If one or more of these trigger values is exceeded during a quarterly sampling event, monthly sampling of the groundwater for all listed parameters is required, with the analytical results due by the 15<sup>th</sup> day of each month. If groundwater monitoring reveals a pH measurement of 6.5 or less, the WDEQ may require sampling and analysis of groundwater for the following additional parameters: aluminum, boron, cadmium, chromium, copper, lead and zinc.

The analytical results for each sampling event, along with impoundment and monitor well location information must be submitted in the Excel spreadsheet "Compliance Monitoring Data Reporting", which can be found on the WDEQ website at the following address: (<http://deq.state.wy.us/wqd/groundwater/pollution.asp>). These data shall be submitted electronically on the due dates established above to the following department address: [cbmgroundwater@state.wy.us](mailto:cbmgroundwater@state.wy.us). In addition, the accompanying analytical laboratory reports must also be submitted either electronically (pdf format) or hard copy via mail to the WDEQ, Sheridan office at the address listed above.

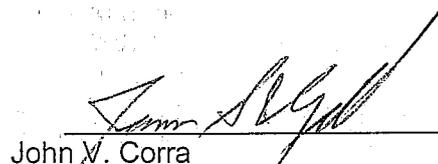
- 4 of 4. Any exceedance of the water quality standards listed above will be considered a violation of this permit. If an exceedance of groundwater standards occurs as a result of the operation of the impoundment, the WDEQ may require further investigation of the groundwater impacts, remediation of the groundwater impacts, and cessation of discharge into the impoundment.

AUTHORIZED BY:

  
 \_\_\_\_\_  
 John F. Wagner

Administrator  
 Water Quality Division

9-26-07  
 \_\_\_\_\_  
 Date of Issuance

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



**GROUNDWATER PROGRAM**  
**REVIEW COMMENTS:**  
**PLANS/SPECIFICATIONS/PROPOSALS/REPORTS**

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
1866 South Sheridan Avenue  
Sheridan, WY 82801  
Phone: 307-672-6457

**Permit Type:** CBM: Groundwater Compliance Monitoring Program

**Water Quality Division Reference (Permit) Number:** 06-857

**Site (Pod) Name:** Powder Valley Unit, Barber Creek CBM Facility

**Applicant:** Lance Oil and Gas Company  
Attn.: Mr. James Alsop  
1400 N. Lincoln  
Gillette, WY 82716

**Consultant:** WWC Engineering  
Attn.: Ben Schiffer  
1849 Terra Ave.  
Sheridan, WY 82801

**Location:** Drainage: Unnamed tributaries to Barber Creek, Barber  
Creek, tributary to Powder River and Powder River  
County : Johnson  
Township 53 North; Range 78 West

**WYPDES NO:** DISCHARGE PERMIT NUMBER WY0051276

**Date On Original Report:** December 19, 2006

**Reviewing Official:** Pete Vogel, North District Geologic Project Analyst

**Date Of Final Review:** September 24, 2007

**Action:** Compliance Monitoring Plan authorized for Powder Valley Unit, Barber  
Creek CBM Facility pursuant to conditions on permit # 06-857

## COMMENTS: GROUNDWATER SECTION

### 1.0 SITE SUMMARY:

#### 1.1 Site Description.

Watershed Name: unnamed tributaries to Barber Creek, Barber Creek,  
tributary to Powder River

Groundwater Classification:

Class 1 (domestic)  
Class 2 (agricultural)  
Class 3 (livestock)      6

Basis for Classification: Laboratory analysis of groundwater indicates ambient water quality meets Water Quality Rules and Regulations Chapter 8 Class III standards (Table 1- Chapter 8) as follows:

Table 1. Basis for Ground Water Classification by Impoundment Name covered under Permit 06-857

Reservoir Name	Down Gradient Monitor Well	Sulfate Concentration	TDS Concentration	SAR Calculation	Overall Ground Water Class
Red Barron	MW43-9RB	2150	3380	9.1	III
Josephine Ford	MW33-10JF	2500	3890	12.8	III
Red Wing	MW12-16RW	741	1700	18.2	III
Glamorous Glennis	MW12-16	2400	4710	6.1	III
Blue Angels	MW23-16	2140	3340	8.2	III
Spruce Goose	MW21-21	6	710	28.2	III

#### Description of Hydrogeology:

Table 2. Names of Impoundments covered under Permit 06-857

Impoundment Name	Capacity (acre/ft)	Qtr	Qtr	Section	Town.	Range	Downgradient Monitoring Well
Red Baron	6.9	NESE	9	50N	77W	MW43-9RB	
Josephine Ford	15.0	NWSE	10	50N	77W	MW33-10JF	
Red Wing	4.8	SWNW	16	50N	77W	MW12-16RW	
Glamorous Glennis	14.0	SWNW	16	50N	77W	MW12-16	
Blue Angels	10.5	NESW	16	50N	77W	MW23-16C1	
Spruce Goose	6.5	NENW	21	50N	77W	MW21-21	

Groundwater occurs at the locations cited above in saturated and partially saturated sandstones and coals. These aquifers are between 3846 and 3904 feet above mean sea level.

Heterogeneity of the bedrock aquifers is well demonstrated by the thicknesses which range from 1.5 feet at Josephine Ford to 57.5 feet at Blue Angels.

Initial hydrologic data are indicated as follows:

Reservoir Name	Depth to Ground Water (feet BGS)	Static Water Depth (feet BTOC)	Static Water Elevation (feet amsl)	Aquifer Rock Type
Red Baron	41.5	44.75	3873	Sandstone
Josephine Ford	49.5	36.4	3908	Coal
Red Wing	92	55.02	3846	Coal
Glamorous Glennis	64.5	43.18	3856	Sandstone
Blue Angels	93	86.27	3875	Sandstone
Spruce Goose	126	90.65	3863	Sandstone

Groundwater flow is generally to the north.

A total of 10 groundwater impoundments are shown on the maps accompanying the permit request. Other impoundments have been otherwise authorized based on lack of groundwater or class IV water having been encountered. (See WDEQ letters September 13 and 20, 2006).

Four previously permitted livestock wells are noted. Two are located in Section 9 and two are located in Section 10. The potential for groundwater to impact the livestock well is extremely low.

## 2.0 MONITORING AND REPORTING REQUIREMENTS

Groundwater monitoring at the impoundments shall be performed on a quarterly basis until further notice and shall include the following information:

- Measurement of static water level and sampling and analysis of groundwater at downgradient wells:

MW43-9RB	MW33-10JF	MW12-16RW
MW12-16	MW23-16	MW21-21

- Reporting results of quarterly monitoring and sampling to the department by January 15<sup>th</sup>, April 15<sup>th</sup>, July 15<sup>th</sup>, and October 15<sup>th</sup> of each year. The first set of data will be due by **Januray 15, 2008**.
- The parameters listed in the tables below are required for groundwater compliance monitoring beneath the listed impoundments:

### Red Baron Impoundment

Parameter	Monitor Well MW43-9RB Background Value (mg/L) (06/27/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2150	≥ 2400	3000
Total Dissolved Solids (TDS)	3380	≥ 4000	5000
pH	8.2	≤ 6.5	6.5 – 8.5 (s.u)

### Josephine Ford Impoundment

Parameter	Monitor Well MW33-10JF Background Value (mg/L) (06/27/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2500	≥ 2750	3000
Total Dissolved Solids (TDS)	3890	≥ 4000	5000
pH	8.2	≤ 6.5	6.5 – 8.5 (s.u)

### Red Wing Impoundment

Parameter	Monitor Well MW12-16RW Background Value (mg/L) (06/23/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	741	≥ 2400	3000
Total Dissolved Solids (TDS)	1700	≥ 4000	5000
pH	8.6	≤ 6.5	6.5 – 8.5 (s.u)

### Glamorous Glennis Impoundment

Parameter	Monitor Well MW12-16 Background Value (mg/L) (06/22/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2400	≥ 2700	3000
Total Dissolved Solids (TDS)	4260	≥ 4630	5000
pH	8.2	≤ 6.5	6.5 – 8.5 (s.u)

### Blue Angels Impoundment

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Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	2140	≥ 2400	3000
Total Dissolved Solids (TDS)	3340	≥ 4000	5000
pH	8.3	≤ 6.5	6.5 – 8.5 (s.u)

### Spruce Goose Impoundment

Parameter	Monitor Well MW21-21 Background Value (mg/L) (06/21/2006)	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	Not sampled	≥ 0.16	0.2
Selenium	Not sampled	≥ 0.04	0.05
Sulfate	6	≥ 2400	3000
Total Dissolved Solids (TDS)	710	≥ 4000	5000
pH	8.8	≤ 6.5	6.5 – 8.5 (s.u)

Trigger values, specific to the groundwater samples at this impoundment, have been assigned to each constituent and are also listed above. If one or more of these trigger values is exceeded during a quarterly sampling event, monthly sampling of the groundwater for all listed parameters is required, with the analytical results due by the 15<sup>th</sup> day of each month. If groundwater monitoring reveals a pH measurement of 6.5 or less, the WDEQ may require sampling and analysis of groundwater for the following additional parameters: aluminum, boron, cadmium, chromium, copper, lead and zinc.

The analytical results for each sampling event, along with impoundment and monitor well location information must be submitted in the Excel spread sheet "Compliance Monitoring Data Reporting", which can be found on the WDEQ website at the following address: (<http://deq.state.wy.us/wqd/groundwater/pollution.asp>). These data shall be submitted electronically on the due dates established above to the following department address: [cbmgroundwater@state.wy.us](mailto:cbmgroundwater@state.wy.us). In addition, the accompanying analytical laboratory reports must also be submitted either electronically (pdf format) or hard copy via mail to the WDEQ, Sheridan office at the address listed above.

**END OF REVIEW**



The State  
of Wyoming



## Department of Environmental Quality

Dave Freudenthal, Governor

John Corra, Director

152 N. Durbin Street • Suite 100 • Casper, Wyoming 82601

### NOTIFICATION OF COVERAGE

January 10, 2007

Jake Strohman  
Regulatory Compliance Advisor  
Petro-Canada Resources  
640 Highway 16-14 Unit J  
Casper, WY 82716

RE: Throne Outfall/Jeffers Draw Gypsum CBM Treatment for Barium Pilot Project,  
Permit # 06-858

Dear Mr. Strohman:

The above application for coverage under General Permit to Construct, Install, Modify or Operate a Pilot Plant in accordance with Section 5, Chapter 11, of the Wyoming Water Quality Rules and Regulations has been reviewed and is hereby approved. You are authorized to construct, install, or modify the facility in accordance with general permit and the materials submitted in your application package. Your attention is directed to the mandatory reporting requirements outlined in Part V, Section O. of the general permit.

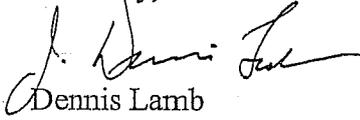
The following items need to be submitted to WDEQ/WQD:

1. a monthly report documenting flow rates at the facility and the influent and effluent sampling (EC on a daily basis, total Ba on a weekly basis) for 2 months
2. a request DEQ to change the Ba monitoring from weekly to match the WYPDES sampling requirements based on the aforementioned Ba sampling demonstrating that a settling basin is not needed.
3. if the sampling indicates that a settling basin is needed Petro-Canada will install one.



If you have any questions please contact Dennis Lamb at 152 North Durbin, Casper, WY, 82601, (307) 473-3452 or [dlamb@state.wy.us](mailto:dlamb@state.wy.us). Thank you.

Sincerely,



Dennis Lamb  
CBM Group Supervisor  
DEQ/WQD

cc: IPS Cheyenne

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
PERMIT TO CONSTRUCT

PERMIT NO. 06-859

REFERENCE PERMIT NO. N/A

The Village at Gillette  
Sewage Lift Station

This permit hereby authorizes the applicant:

The Village at Gillette, Limited Partnership  
135 S. 5<sup>th</sup> Avenue, #1  
Oakdale, CA 95361

to construct, install or modify the sanitary sewage lift station at the Village at Gillette, according to the procedures and conditions of the application number 06-859. The facility is located in the county of Campbell, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed within one year of issuance.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

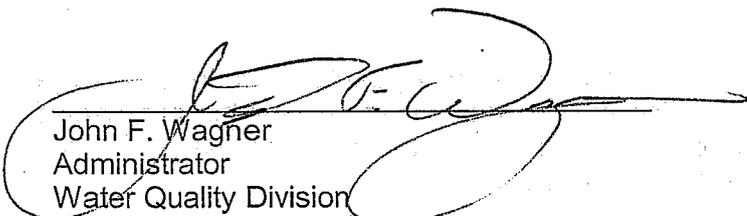
The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and

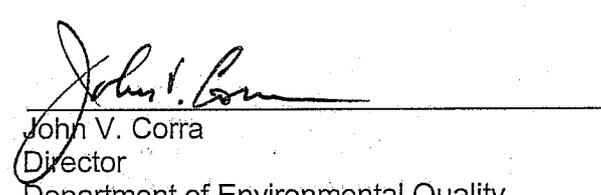
permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 4            The applicant will provide immediate oral or written notice to the Northeast District, Water Quality Division, 152 North Durbin, Suite 100, Casper, WY, 82601, Phone 307-473-3465, FAX 307-473-3458, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 4            Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northeast District, Water Quality Division, 152 North Durbin, Suite 100, Casper, WY, 82601 a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
- a.        Date that construction of the facility was completed; and
  - b.        Date that the facility was placed in operation; and
  - c.        Certification the facility was constructed in accordance with the terms and conditions of the permit; or
  - d.        Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 3 of 4            The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".
- 4 of 4            The lift station will be required to be "generator ready", in the event of loss of power.

AUTHORIZED BY:

  
John F. Wagner  
Administrator  
Water Quality Division

  
John V. Corra  
Director  
Department of Environmental Quality

5/15/07  
Date of Issuance

BRC 5-11-7  
KLF/rm/7-0395

cc: Steve Bruce, Bruce Engineering, Inc., P.O. Box 194, Gillette, WY 82717

## STATEMENT OF BASIS

1. Permit Number: **06-859**
2. Application reviewed for compliance with the following applicable regulations :  
Chapter 3 and Chapter 11 of the Wyoming Water Quality Rules and Regulations
3. Does the permit comply with all applicable regulations identified above?  
  
YES
4. Facilities include components not specifically covered or differing from applicable regulations and approval is based upon a deviation in accordance with Section 5.  
  
N/A
5. A review to determine groundwater impacts in accordance with Section 17, Chapter 3 is required.  
  
No groundwater was found based on the submitted geotechnical report.
6. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

## CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by Karen L. Farley and completed on May 11, 2007. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
PERMIT TO CONSTRUCT

PERMIT NO. 06-860

REFERENCE PERMIT NO. N/A

Windy #1 Water Supply Well

This permit hereby authorizes the applicant:

Jeff Deimling  
Windy Ridge Developers  
P.O. Box 2334  
Gillette, WY 82717

to drill, construct, develop and test the Windy #1 Water Supply Well according to the procedures and conditions of the application number 06-860. The facility is located in the county of Campbell, in the State of Wyoming. All construction, installation, or modification allowed by this permit shall be completed within one year of issuance.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Granting this permit does not imply that DEQ guarantees or ensures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements. Compliance with discharge standards remains the responsibility of the permittee.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

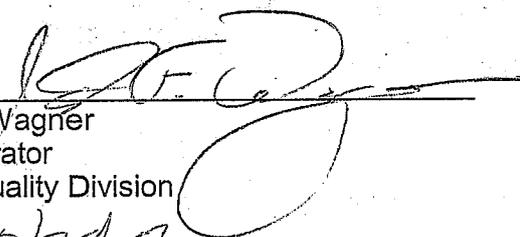
The permittee shall construct and operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and

permit. This permit does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

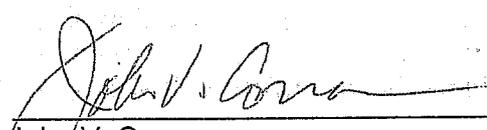
In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 5 The applicant will provide immediate oral or written notice to the Northeast District, Water Quality Division, 152 North Durbin, Suite 100, Casper, WY, 82601, Phone 307-473-3465, FAX 307-473-3458, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 5 Within sixty days of completion of construction of the authorized facility, the applicant will submit to the Northeast District, Water Quality Division, 152 North Durbin, Suite 100, Casper, WY, 82601 a certification of completion signed by the Engineer of Record or the owner. A form titled "Certificate of Completion" has been provided.
- a. Date that construction of the facility was completed; and
  - b. Date that the facility was placed in operation; and
  - c. Certification the facility was constructed in accordance with the terms and conditions of the permit; or
  - d. Certification the facility was completed with changes or modifications. Submittal of as-constructed plans and specifications for the system as it was constructed, certified by an engineer if appropriate is required. All modifications or deviations from the authorized plans must be highlighted.
- 3 of 5 The review and approval of this permit is based upon the items identified in the attached "Statement of Basis".
- 4 of 5 Disinfection in accordance with Chapter 12, Section 9(b)(A)(II) shall be performed.
- 5 of 5 The applicant will perform yield and drawdown tests in accordance with Chapter 12, Section 9(b) (ii). Results of these tests are to be provided with the Certificate of Completion.

AUTHORIZED BY:

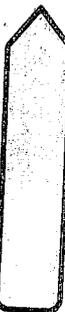
  
John F. Wagner  
Administrator  
Water Quality Division

3/28/07  
Date of Issuance  
JRW 3/27/07

  
John V. Corra  
Director  
Department of Environmental Quality

KLF/rm/7-0243

cc: Steve Bruce, Bruce Engineering, Inc., P.O. Box 194, Gillette, WY 82717



## STATEMENT OF BASIS

1. Permit Number: **06-860**
2. Application reviewed for compliance with the following applicable regulations :  
Chapter 3, Chapter 11 & Chapter 12 of the Wyoming Water Quality Rules and Regulations
3. Does the permit comply with all applicable regulations identified above?

NO – see below

The permit approval is based upon a deviation from applicable regulations in accordance with Section 5 of Chapter 11

4. Facilities include components not specifically covered or differing from applicable regulations and approval is based upon a deviation in accordance with Section 5.

- a. The permit includes approval to deviate from the following regulatory requirements:

Chapter 11, Section 65 (b) requires "...an oversized hole, at least four inches greater in diameter than the production casing, drilled." A 7 inch production casing will be allowed. This will provide an oversized hole of 2 7/8 inches greater in diameter than the casing. A larger production casing will **not** be allowed, unless a larger bore than 9 7/8 inches is provided. Any deviation of this directive will require a modification of this permit and will need to be obtained by the WDEQ **prior** to drilling.

- b. Briefly state the basis for the deviation

Well construction methods will consist of pressure grouting from the bottom to top in combination with regularly spaced centralizers (200 feet +/-), followed by submission of bond logs upon completion of the well.

5. A review to determine groundwater impacts in accordance with Section 17, Chapter 3 is not required.
6. Documentation of Statement of Basis: The archive file for this permit includes adequate documentation of all sections of this Statement of Basis.

## CERTIFICATION

The issuance of this permit is based upon a review of the application package submitted in accordance with the requirements of Chapter 3, Section 6, Wyoming Water Quality Rules and Regulations. This review was performed by Karen L. Farley and completed on March 27, 2007. Permit issuance is recommended based upon statements, representations, and procedures presented in the permit application and supporting documents, permit conditions, and the items identified in this "Statement of Basis."

STATE OF WYOMING  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
UNDERGROUND INJECTION CONTROL PERMIT ISSUED UNDER  
WYOMING WATER QUALITY RULES AND REGULATIONS  
CHAPTER 16

CLASS V INJECTION WELL

(X) New

Permit Number UIC 06-862

( ) Modified

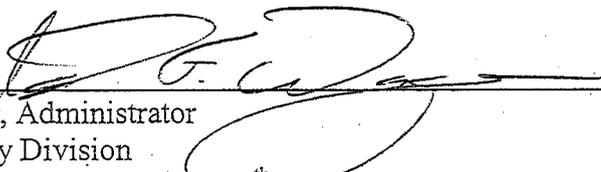
UIC Facility Number WYS-005-00446

In compliance with the Wyoming Environmental Quality act (W.S. 35-11-101 through 1104, specifically 301(a)(i) through 301 (a)(iv), Laws 1973, Ch. 250, Section 1) and Wyoming Water Quality Rules and Regulations, Chapter 16.

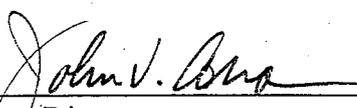
Applicant: Yates Petroleum Corporation  
105 South 4<sup>th</sup> Street  
Artesia, NM 88210  
(505) 748-4401

Yates Petroleum Corporation hereafter referred to as the permittee, is authorized to operate the proposed Class V (5F2) subsurface drip irrigation project known as the Bluebird CBM Project in the SWSE quarter Section 26 and West ½ Section 35, Township 48 North, Range 75 West, 6th Principal Meridian, Campbell County, according to the procedures and conditions of application UIC 06-862 and requirements and other conditions of this permit.

This permit shall become effective on date of issuance.

  
\_\_\_\_\_  
John Wagner, Administrator  
Water Quality Division  
Herschler Building, 122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002  
(307)-777-7781

5/18/07  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
John V. Corra, Director  
Department of Environmental Quality  
Herschler Building, 122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

5/19/07  
\_\_\_\_\_  
Date

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### A. Discharge Zone

The Bluebird CBM Project is authorized to inject into the Quaternary residuum and slopewash deposits and Wasatch bedrock formation south of Dead Horse Creek, in Campbell County.

### B. Well and Area of Review

The injection well authorized by this permit is located as follows: SWSE quarter Section 26 and West ½ Section 35, Township 48 North, Range 75;

The Area of Review around this facility is described as follows: NWSE, SWSE, NESW, SESW Section 26; West ½ Section 35, NENE, SENE Section 34, Township 48 North, Range 75.

The area of review is based on the following:

Description	Inputs	Units
Permit Duration	10	Years
Porosity of receiver <sup>1</sup>	20 (varies)	Percent
Maximum injection rate	10000	Barrels/day
Thickness of receiver <sup>1</sup>	164 feet (varies)	Feet
Area of review	2250	Feet

<sup>1</sup>receiver is the vadose zone and groundwater

### C. Groundwater Classification

Six boreholes were advanced in the project area. One of the boreholes was dry to a depth of 150 feet beneath the proposed facility. Monitoring wells were completed in five of the boreholes. The groundwater beneath the proposed facility is classified as Class III according to Wyoming Water Quality Rules and Regulations, Chapter 8. Total dissolved solids concentrations in groundwater ranged from 1810 to 3250 milligrams/liter, while sulfate concentrations ranged from 1080 to 1760 milligrams/liter, which is in excess of Class II groundwater standards.

### D. Authorized Operations

The permittee is authorized to inject 420,000 gallons (10,000 barrels) per day of produced coalbed methane water through the Bluebird CBM Project. The produced water originates from coal bed methane wells completed in the Big George coal seam.

### E. Hazardous Waste

This permit does not allow for the injection of any hazardous waste as defined in 40 CFR 261.3 and in Wyoming Solid Waste Management Rules and Regulations, Chapter 2. Injection of any substance defined as a hazardous waste, whether hazardous by listing or by characteristic is a violation of this permit.

## **F. Proper Operation and Maintenance**

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit. The permittee shall operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes: effective performance, adequate funding, operator staffing and training, and laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

The injection well covered by this permit shall meet all construction requirements outlined in Wyoming Water Quality Rules and Regulations, Chapter 16.

The permittee is required to operate in accordance with statements, representations and procedures presented in the complete permit application and supporting documents as accepted and approved by the Administrator. Any modifications which will result in a violation of permit conditions shall be reported by submission of a new or amended permit application and shall not be implemented until a new or modified permit has been issued. Injection into a well may not begin until construction is complete and the permit is approved.

## **G. Entry and Inspection**

The permittee shall allow the Administrator (upon presentation of credentials and during normal working hours) to enter the premises where a regulated facility is located, or where records are kept under the conditions of this permit and inspect and photograph the discharge and related facilities, review and copy reports and records required by this permit, collect fluid samples for analysis, measure and record water levels, and perform any other function authorized by law or regulation.

## **H. Environmental Monitoring Program for Groundwaters of the State**

### General Requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. The permittee shall retain records of all monitoring information including all calibration and maintenance records, copies of the 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 (3) years from the date of the sample measurement, report, or application. This period may be extended by request of the Administrator at any time.
3. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The initials or name(s) of the individual(s) who performed the sampling or measurements;
  - c. The date(s) analyses were performed;

- d. The time(s) analyses were initiated;
  - e. The initials or name(s) of the individual(s) who performed the analyses;
  - f. References and written procedures for the analytical techniques or methods used;
  - g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.
4. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.
  5. The permittee shall retain all records concerning the nature and composition of injected fluids until five (5) years after completion of any specified plugging and abandonment procedures. The administrator may require the owner/operator to deliver the records to the administrator at the conclusion of the retention period.
  6. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the operator becomes aware of the circumstances. The report should include:
    - a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to a usable groundwater of the state;
    - b. Any noncompliance with a permit condition or malfunction of the discharge (injection) system which may cause fluid migration into or between usable ground waters of the state;
    - c. A written submission shall be provided within 5 days of the time the operator becomes aware of the circumstances. This written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
  7. The permittee shall report all instances of noncompliance not reported otherwise, at the time monitoring reports are submitted.
  8. 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 30 days following each schedule date.

**I. Requirements for Monitoring the Discharge.**

1. The permittee shall monitor the quantity and quality of the injected fluid on the schedule listed in Table 1 below.

**Table 1 (Injected Fluid Sampling Schedule)**

Sampling and Reporting Schedule	Parameter Analyzed	Analytical Method	Permit limit or UCL*
Quarterly 12/31; 3/31; 6/30; 9/30	Total Volume	Flowmeter	0.42 million gallons/day
Annually 12/31	Total Dissolved Solids	160.1	5,000 mg/L

- The groundwater in the receiving formation shall be sampled and the following parameters analyzed according to the schedule identified in Table 2.

**Table 2 (Groundwater Sampling Schedule)**

WELL NAME OR NUMBER	SAMPLING AND REPORTING SCHEDULE (DUE DATE)	PARAMETER ANALYZED	ANALYTICAL METHOD	PERMIT LIMIT or UCL*
MW-2, MW-3, MW-4	Quarterly: (3/31; 6/30; 9/30; 12/31)	Depth to static water (ft)	Steel tape with chalk or electronic tape	None (tracking purposes: surface water protection)
MW-2, MW-3, MW-4	Quarterly (3/31; 6/30; 9/30; 12/31)	Total Dissolved Solids	160.1	5000 milligrams/liter
MW-2, MW-3, MW-4	Quarterly (3/31; 6/30; 9/30; 12/31)	Sulfate	300.0	3000 milligrams/liter
MW-2, MW-3, MW-4	Quarterly (3/31; 6/30; 9/30; 12/31)	Selenium	200.8	0.05 milligrams/liter

Failure to perform and report analyses in accordance with the prescribed schedule and method is a violation of this permit.

- Water migrating from the drip irrigation system shall not re-surface into Dead Horse Creek or any of its tributaries. Dead Horse Creek and its tributaries proximal to the facility shall be inspected on a monthly basis for surface seeps. Any observations of water re-surfacing into these drainages from the monthly inspections or other observations shall be reported to the WDEQ immediately. Cessation of the discharge into the drainage may be required.

**Table 3 (Surface Water Protection)**

Inspection Schedule	Reporting Schedule	Action	Permit limit
Monthly	Quarterly 3/31; 6/30; 9/30; 12/31	Visual Inspection for Surface seeps	Presence of water

The requirements for monitoring the discharge listed in Table 1, Table 2, and Table 3 shall be submitted to the following address: WDEQ, Groundwater Program, UIC Coordinator, Herschler Building 4W, 122 West 25<sup>th</sup> Street, Cheyenne, Wyoming. A copy of the data shall also be supplied to the WDEQ, Sheridan field office at the following address: WDEQ, Groundwater Program, 1866 South Sheridan Ave., Sheridan, WY 82801.

## **J. Test Procedures**

All samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. All samples taken shall include a trip blank of distilled water for each sampling date and a duplicate sample at least once per year. All required analyses shall be conducted in compliance with Wyoming Water Quality Rules and Regulations, Chapter 8, Section 7.

## **K. Records and Reports**

The permittee shall furnish to the Administrator within a specified time any information which the Administrator may request relating to the operation of the facility, including copies of records required to be kept by this permit. The permittee shall retain copies of all records and reports required by this permit for a period of three (3) years following permanent well abandonment. After that time, those records shall be delivered to the Administrator for disposal or archive at his discretion. Reports of compliance or noncompliance with, and any progress reports on, interim and final requirements contained in any compliance schedule shall be submitted no later than thirty (30) days following each schedule date. Confirmed noncompliance resulting in the migration of injected fluid into any zone outside the permitted receiver shall be reported to the Administrator within twenty-four (24) hours, and a written submission (via certified mail) shall be provided within five (5) days of the time the permittee becomes aware of the excursion. The written submission shall contain: a description of the noncompliance; the period of noncompliance, including exact dates and times, and if the noncompliance has not been controlled, the anticipated time it is expected to continue; and a list of the steps taken or planned to reduce, eliminate, and prevent the recurrence of the noncompliance. Confirmed noncompliance not already reported under this section shall be reported at the time monitoring reports are submitted. The reports shall contain the same information as required by the paragraph above. The permittee shall notify the Administrator thirty (30) days in advance of any planned alteration, conversion, or abandonment of the well covered by this permit.

## **L. Permit Actions**

This permit is authorized for a period of ten (10) years. If the permittee wishes to continue injection after the expiration date of this permit he shall apply to the Administrator and obtain a new permit. It shall not be a defense for the permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. The filing of a request by the permittee, or at the instigation of the Administrator, for permit modification, revocation, termination, or notification of planned changes or anticipated noncompliance shall not stay any condition of this permit.

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

1. Violation of this permit; or
2. Obtaining a permit by misrepresentation of facts in the application.

This permit will be reviewed at least once every five (5) years, and may be reviewed more frequently. A permit may be modified at any time as may be required, including for conformity with changes in

regulations or standards which occur after the permit was issued. A permit may be modified in whole or part in order to apply more or less stringent standards; or prohibitions for toxic or other substances present in the permittees discharge as may be ordered by the Environmental Quality Council.

#### **M. Abandonment**

##### General Requirements

1. The permittee shall notify the administrator at least thirty (30) days prior to abandonment of the facility.
2. An abandonment report, detailing the compliance with abandonment procedures outlined in the original application for coverage under this permit, or describing any deviations from the original plan, shall be submitted as soon as practicable after abandonment. The abandonment shall include reclamation of the well site.
3. The injection system covered by this permit shall be abandoned in accordance with Wyoming Water Quality Rules and Regulations, Chapter 16, Section 12. Groundwater monitoring wells covered by this permit shall be abandoned in accordance with Wyoming Water Quality Rules and Regulations, Chapter 11, Part G.

#### **N. Duties of the Permittee**

The permittee shall give advance notice to the Administrator as soon as possible of any planned physical alteration or additions, other than authorized operation and maintenance, to the permitted facility and receive authorization prior to implementing the proposed alternation or addition. The permittee shall furnish the Administrator within a reasonable time any information which the Administrator may request to determine whether cause exists for modifying, revoking, or reissuing, or terminating this permit, or to determine compliance with this permit; and to furnish to the Administrator upon request, copies of records required to be kept by this permit. Any modification which may result in a violation of a permit condition shall be reported to the Administrator, and any modification that will result in a violation of any permit conditions shall be reported to the Administrator through the submission of a new or amended permit application. The permittee shall report all instances where he becomes aware that he failed to submit any relevant facts in the permit application, or where he submitted incorrect information in a permit application or in any report to the Administrator, and shall promptly submit such facts or information.

If any cultural materials are discovered during construction, work in the area should halt immediately. The Administrator and the Wyoming State Historic Preservation Office shall be contacted (777-7697) and the materials shall be evaluated by an archaeologist or historian meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983).

#### **O. Signatories Requirement**

All reports filed in conjunction with this permit shall contain 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.”

All reports required by this permit and other requested information shall be signed as follows:

For a corporation – by a principal executive officer of at least the level of vice-president;

For a partnership or sole proprietorship – by a general partner or the proprietor, respectively;

For a municipality, state, federal, or other public agency – by either a principal executive officer or ranking elected official; or

By a duly authorized representative for any of the above. A person is a duly authorized representative only if:

1. The authorization is made in writing by one of the prescribed principals;
2. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
3. The written authorization is submitted to the Administrator.

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Administrator prior to or together with any reports or information, to be signed by the new authorized representative.

#### **P. Noncompliance**

The permittee shall comply with all conditions of the permit. Any permit noncompliance constitutes a violation of Wyoming Water Quality Rules and Regulations, Chapter 16 and is grounds for enforcement action, permit termination, revocation, or modification. Confirmed noncompliance resulting in an excursion shall be reported to the Administrator orally within twenty-four (24) hours, and a written submission shall be provided within five (5) days of the time the permittee becomes aware of the excursion. The written report shall contain the sections specified in Section K of this permit. Any permit noncompliance constitutes a violation of this permit.

The filing of any 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.

#### **Q. Permit Transfer**

Any transfer of this permit shall be accomplished by the submission of the proper forms for permit transfer to the Administrator. Transfer of this permit must first be approved by the Administrator and the Director. No transfer shall be approved unless the proposed permittee agrees to bring any and all

noncompliance issues into compliance with this permit. The permittee is alone responsible for the operation of the facility covered by this permit. Sale of the facility and subsequent operation of this facility by another is a violation of this permit unless a transfer of this permit has first been accomplished.

#### **R. Property Rights**

This permit does not convey any property rights of any sort or any exclusive privilege. This permit does not authorize injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

#### **S. Severability**

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

WDF/rm/7-0416

STATE OF WYOMING  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
UNDERGROUND INJECTION CONTROL PERMIT ISSUED UNDER  
WYOMING WATER QUALITY RULES AND REGULATIONS  
CHAPTER 13

CLASS I INJECTION WELL

(X) New  
( ) Modified

Permit Number: **06-863**  
UIC Facility Number WYS-005-00284

In compliance with the Wyoming Environmental Quality act (W.S. 35-11-101 through 1104, specifically 301(a)(i) through 301 (a)(iv), Laws 1973, Ch. 250, Section 1) and Wyoming Water Quality Rules and Regulations, Chapter 13.

Applicant: Trend Exploration I, LLC  
200 North Loraine, Suite 300  
Midland, TX 79701  
(915) 687-3888

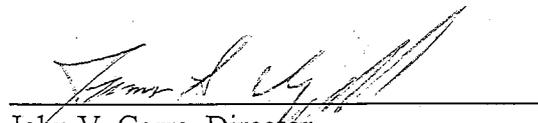
Trend Exploration I, LLC, hereafter referred to as the Permittee, is authorized to operate **Boothill 6-II** in Section 6, Township 53 North, Range 70 West of the 6<sup>th</sup> Principal Meridian, Campbell County according to the procedures and conditions of application 06-863 and requirements and other conditions of this permit.

This permit shall become effective on date of issuance.



John Wagner, Administrator  
Water Quality Division  
Herschler Building, 122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002  
(307)-777-7781

11/28/07  
Date



John V. Corra, Director  
Department of Environmental Quality  
Herschler Building, 122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

11/28/07  
Date

JAP/cs/7-1021

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**A. Discharge Zone**

This injection well is authorized to inject into the Minnelusa Formation as follows:

**Table 1 (Discharge Zone)**

Well Name	Perforated Intervals (injection start depth)	Perforated Intervals (injection end depth)
Boothill 6-II	7,661	7,688

Additional perforations may be installed within the above named intervals of the authorized formations with the prior written approval of the Water Quality Division.

The packer (set on the bottom of the tubing) shall be set within 500 feet of the top of the authorized discharge zone for all wells.

**B. Well and Area of Review**

The well(s) authorized by this permit is/are located in:

Township 53 North, Range 70 West, Section 6, 6<sup>th</sup> Principal Meridian

The Area of Review is determined by calculating the cone of influence, volumetric cylinder, or using a default radius of 1,320 feet, whichever is greater.

The Area of Review around this well is legally described as:

Township 53 North, Range 70

Section 6: NW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub>, SW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub>, SW<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub>, W<sup>1</sup>/<sub>2</sub> SE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub>, N<sup>1</sup>/<sub>2</sub> NW<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub>, NW<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub>

Township 53 North, Range 71 West

Section 1: NE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub>, S<sup>1</sup>/<sub>2</sub> NE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub>, SE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub>, NE<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> SE<sup>1</sup>/<sub>4</sub>

The Area of Review is based on the following information:

**Table 2 (Area of Review Inputs for Formation)**

Description	Inputs	Units
Boothill 6-II		
Time	13	Years
Porosity	13	Percent
Injection Rate	2,000	BPD
Thickness of Receiver	52	Feet
Area of Review	1,470	Feet
Fracture Gradient	0.662	PSI/Feet

### C. Groundwater Classification

The groundwater in the Minnelusa Formation is classified as Class VI according to Wyoming Water Quality Rules and Regulations, Chapter 8. This classification was made for the following reasons:

1. This well has produced 79,983 barrels of oil from this formation and therefore the formation is so contaminated that it would be economically or technologically impractical to make the water useable;
2. It is located in such a way, including depth below the surface, so as to make use economically and technologically impractical;
3. This formation has been a permitted receiver in the past. The water in this formation may be assumed to contain various dissolved contaminants injected legally through an existing Class II injection well permit from the Wyoming Oil and Gas Conservation Commission (Docket No. 421-2002).

### D. Authorized Operations

The permittee is authorized to inject according to the following permit limits:

**Table 3 (Permit Limits)**

Description	Permit Limits	Units
Boothill 6-11		
Maximum Injection Rate	2,000	BPD
Surface Tubing Injection Pressure (Maximum)	2,023	PSIG
Annulus Pressure (Minimum)	200	PSIG
Annulus Pressure (Maximum)	800	PSIG

The injection pressure shall be continuously monitored and recorded on a chart recorder or digitally. The permittee shall continuously monitor the pressure on the casing annulus and tubing, and shall maintain a positive pressure on the annulus.

The permittee may conduct step injection tests to determine changes in the fracture pressure as the injection continues. After acceptance by the Administrator of these tests the permittee shall limit the injection pressure to 100 psig less than the new fracture pressure as measured on the surface.

If the injection pressure and/or rate exceeds authorized limitations it is a violation of this permit and shall be reported pursuant to Section I of this permit.

The permittee is authorized to inject industrial processing wastes as follows:

#### Well workover wastes

This category includes water associated with drilling fluids used during the drilling of any oil and gas well or the water supply wells on oil and gas locations; rig wash water; well completion, treatment and stimulation fluids; waste produced during any workover or abandonment of an oil or gas well or test hole; wastes from subsurface gas storage and retrieval; liquid hydrocarbons removed from the production stream but not from oil refining; materials ejected from a producing well during the process known as blowdown;

No additional prior approval is required in order to accept these wastes. Please account for all such wastes on your quarterly reports under the heading **Well workover wastes - Authorization #1997-1**, rather than the name of the company generating the wastes.

### **Water and other tank bottoms**

This category includes water and other tank bottoms from the storage facilities that hold crude oil, natural gas, gas condensate, or wastes which are exempt under the oil and gas exploration and production exemption to RCRA.

At least once every three (3) years, permittee shall obtain a comprehensive water analyses including all parameters except PCB's found in Wyoming Water Quality Rules and Regulations, Chapter 13, Appendix A for each source of waste accepted under this provision. No additional prior approval is required in order to accept these wastes. Please account for all such wastes on your quarterly report under the title **Water and other tank bottoms- Authorization #1997-2** rather than the name of the company generating these wastes.

### **Gas plant sweetening and dehydration wastes**

This category includes gas plant sweetening wastes for sulfur removal including amines, backwash, and any wastes produced by a Bevon Stetford processing plant; gas plant dehydration wastes, and backwash.

At least once every three (3) years, permittee shall obtain a comprehensive water analyses including all parameters except PCB's found in Appendix A, Chapter 13, Water Quality Division Rules and Regulations, for each company generating such wastes which are accepted under this provision. These analyses shall be accompanied by a complete description of the waste sampled including the plant name and location, and whether the waste is glycol, amine, or caustic waste. No additional prior approval is required in order to accept these wastes. Please account for all such wastes on your quarterly report under the title **Gas Plant Wastes – Authorization #1997-3** rather than the name of the company generating these wastes.

### **Miscellaneous Oilfield Related Wastes**

Cooling tower blowdown wastes on gas plant or other exempt sites; packing fluids; pigging wastes from in field gathering lines, but not from interstate pipeline systems;

At least once every three (3) years, permittee shall obtain a comprehensive water analyses including all parameters except PCB's found in Appendix A, Chapter 13, Water Quality Division

Rules and Regulations, for each source of waste accepted under this provision. No additional prior approval is required in order to accept these wastes. Please account for all such wastes on your quarterly report under the title **Miscellaneous Oilfield - Authorization# 1997-4** rather than the name of the company generating these wastes.

### **Regulated Underground and Above Ground Storage Tank Wastes**

Wastes generated during the removal or maintenance of Underground or Above Ground Storage Tanks, so long as those tanks are regulated facilities under the Above Ground and Underground Storage Tank Program administered by the Water Quality Division. Under this provision, wastes including water from inside an active tank, water found inside the tank during a removal operation; groundwaters contaminated by gasoline and diesel, and water used in any form of testing operation, may be injected without analyses and without prior approval. Permittee shall obtain a written statement from the generator of any such waste stating that the waste is from a storage tank regulated by the Water Quality Division. These statements shall contain the certification statement found in your permit. Please account for all such wastes on your quarterly report under the title **Regulated Tank Wastes – Authorization #1997-5** rather than the name of the company generating these wastes.

### **Oilfield Produced Water**

This category includes all waters produced directly with the production of oil and gas and collected in the field where the oil and gas were produced. It does not include tank bottoms or water accumulated in gas processing plants, refineries, or intrastate or interstate pipe line facilities.

No additional prior approval is required in order to accept these wastes. Please account for all such wastes on your quarterly reports under the heading **Oilfield Produced Water - Authorization #1997-6**, rather than the name of the company generating the wastes.

### **Sump Wastes**

Wastes known as "sump wastes" from floor drains and septic tanks at various sites. This general category includes wastes from sumps in automotive shops, gasoline stations, oilfield service industries, airports, and similar shops which perform mechanical work. This category does not include industrial process wastes from manufacturing operations or wastes from sumps in shops which do not perform mechanical work. These wastes must be characterized fully prior to disposal to insure that they are not hazardous wastes. The Water Quality Division will issue a letter of approval for each new source of waste under this category prior to permittee accepting the first lot of waste. In order to obtain such an approval letter, permittee shall submit a complete written description of the waste, including the name of the company generating the waste, the address or legal description of the location where the waste was produced, a description of the processes that produced the waste, and a comprehensive water analyses including all parameters except PCB's found in Appendix A, Chapter 13, Water Quality Division Rules and Regulations. Based on this information, the Water Quality Division may issue an

approval letter for the disposal of non-hazardous sump waste for a duration of no more than three (3) years.

In order to renew a previously approved source, once every three (3) years, permittee shall obtain a comprehensive water analyses including all parameters except PCB's found in Appendix A, Chapter 13, Water Quality Division Rules and Regulations. Please account for all such wastes on your quarterly report under the title **Miscellaneous Sump Waste – Authorization #1997-7** rather than the name of the company generating these wastes.

### **Bevill Amendment Wastes**

The Bevill Amendment exempts most wastes generated in the mining industry from regulation under RCRA. Wastes covered by the Bevill Amendment to RCRA are detailed in 40 CFR 261.4(b)(7). This section of 40 CFR 261 sets up two (2) types of mining wastes which are exempt, beneficiation wastes and processing wastes. The two terms are almost interchangeable, except that processing usually refers to a process which produces a final end product, while beneficiation produces an intermediate product which must be further refined to be used. Once every three (3) years, permittee shall obtain a comprehensive water analyses including all parameters except PCB's found in Appendix A, Chapter 13, Water Quality Division Rules and Regulations. Please account for all such wastes on your quarterly report under the title **Bevill Amendment Waste – Authorization #1997-8** rather than the name of the company generating these wastes.

### **Water well wastes**

This category of fluids includes water associated with drilling fluids used during the drilling of any water supply well, rig wash water, well completion, treatment and stimulation fluids, waste produced during any workover or abandonment of a water well, or a test hole including spent acid from acid fracturing or well acidizing jobs.

No additional prior approval is required in order to accept these wastes. Please account for all such wastes on your quarterly reports under the heading **Water well wastes - Authorization #1997-9**, rather than the name of the company generating the wastes.

### **Miscellaneous Non-hazardous wastes**

In addition to the authorizations contained in this permit, permittee may still obtain additional approvals for wastes which do not fit any of the above classifications. Any such waste must be characterized fully in order to insure that this waste is not a hazardous waste. The Water Quality Division will issue a letter of approval for each new source of waste under this category prior to permittee accepting the first lot of waste. In order to obtain such an approval letter, permittee shall submit a complete written description of the waste, including the name of the company generating the waste, the address or legal description of the location where the waste was produced, a description of the processes that produced the waste, a certification that the waste is not a listed hazardous waste, and a comprehensive water analyses for the waste. Since this is a very broad category of wastes, the exact analyses required will be based on the type of processes

that generate the waste, and the type of contaminants likely to be present in the waste. Based on this information, the Water Quality Division may issue an approval letter for the disposal of non-hazardous waste for a duration of no more than three (3) years.

In order to renew a previously approved source, once every three (3) years, permittee shall obtain a comprehensive water analyses including all parameters included in the initial approval. Please account for all such wastes on your quarterly report under the title **Miscellaneous Non-Hazardous Waste – Authorization #1997-10** rather than the name of the company generating these wastes.

### **Wastes accepted under these blanket authorizations**

For each type of waste accepted under any of the blanket authorizations contained in this permit, permittee shall require that the company generating these wastes provide a full written description of the wastes to support the fact that the wastes are similar to the wastes described in the authorization. Permittee shall keep records on site concerning the source of all such wastes. All wastes accepted under any authorization contained in this permit shall be neutralized to a pH of greater than 2.0 and less than 12.5.

### **Emit Water Discharge Technology, LLC**

Emit Water Discharge Technology LLC can produce a wastewater which is very low in pH. Provided that this waste is neutralized to a pH of at least 2.0 in the original collection vessel this waste can be injected. Records of the volume of this waste shall be reported as a separate line item. Permittee shall provide a monthly field pH reading for this waste showing that it has been neutralized prior to disposal.

### **Corrosion Inhibitors**

The composite injection stream may also contain a small amount of Nalco 7801 corrosion inhibitor. Nalco 7801 is an aqueous solution of alkonal amine phosphate ester and ethylene glycol. Nalco 7801 has been shown to not meet the definition of hazardous waste under RCRA.

The composite injection stream may also contain a small amount of Betz GCP-188 deposit control additive. Betz GCP-188 deposit control additive has been shown to not meet the definition of hazardous waste under RCRA.

The composite injection stream may also contain a small amount of Tretolite SP-200 scale inhibitor. Tretolite SP-100 deposit control additive has been shown to not meet the definition of hazardous waste under RCRA.

The composite injection stream may also contain a small amount of Baker Petrolite SCW2600 scale inhibitor. Baker Petrolite SCW2600 deposit control additive has been shown to not meet the definition of hazardous waste under RCRA.

The composite injection stream may also contain a small amount of Tretolite NC-370 Biocide added to control bacterial growth in the injection system. Tretolite NP-370 biocide additive has been shown to not meet the definition of hazardous waste under RCRA.

Additional corrosion inhibitors may be used with the prior written approval of the Water Quality Division.

#### **E. Hazardous Waste**

This permit does not allow for the injection of any hazardous waste as defined in 40 CFR 261.3 and in Wyoming Solid Waste Management Rules and Regulations, Chapter 2. Injection of any substance defined as a hazardous waste, whether hazardous by listing or by characteristic is a violation of this permit.

#### **F. Proper Operation and Maintenance**

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

The permittee shall operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes mechanical integrity of the well, effective performance, adequate funding, operator staffing and training, and laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

The injection well covered by this permit shall meet all construction requirements outlined in Wyoming Water Quality Rules and Regulations, Chapter 13, Section 11.

The permittee is required to operate in accordance with statements, representations and procedures presented in the complete permit application and supporting documents as accepted and approved by the Administrator.

Any modifications which will result in a violation of permit conditions shall be reported by submission of a new or amended permit application and shall not be implemented until a new or modified permit has been issued.

Injection into a well may not begin until construction is complete.

#### **G. Entry and Inspection**

The permittee shall allow the Administrator, or an authorized representative for the Administrator (upon presentation of credentials and during normal working hours) to enter the premises where a regulated facility is located, or where records are kept under the conditions of this permit and inspect and photograph the discharge and related facilities, review and copy

reports and records required by this permit, collect fluid samples for analysis, measure and record water levels, and perform any other function authorized by law or regulation.

#### **H. Environmental Monitoring Program for Groundwaters of the State**

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. The permittee shall prepare records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation to be retained for a period of at least three (3) years after closure of the facility.
3. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The name(s) of individual(s) who performed the sampling or measurements;
  - c. The date(s) analysis were performed;
  - d. Names of individuals who performed the analyses;
  - e. The analytical techniques or methods used;
  - f. The results of such analyses.
4. No ground water monitoring program for near surface ground waters is required because of the excellent confinement of this formation.

#### **I. Requirements for Monitoring the Discharge**

The permittee shall monitor the injection pressure continuously and record readings on a strip chart recorder, a circular chart recorder, or digitally with the pressure transducer on the well or in the injection plant. A high pressure kill switch shall also be installed on the injection tubing. This device shall be set to preclude violations of the maximum injection pressure.

The permittee shall monitor the injection volume continuously and record those readings on a strip chart recorder, a circular chart recorder, or digitally with the pressure transducer on the well or in the injection plant.

The permittee shall continuously monitor the pressure of the casing/tubing annulus and shall maintain a positive pressure on the annulus. The pressure maintained shall not be less than 200 psig or more than 800 psig. The permittee shall continuously record the annulus pressure on a strip chart recorder, a circular chart recorder, or digitally with the pressure transducer on the wellhead.

The permittee shall shut-in the well(s) covered by this permit annually for a period of time long enough to observe a valid pressure falloff curve. This test shall be considered complete when the pressure curve becomes asymptotic to a straight line. This test shall be analyzed by the permittee using either the Miller Dyes Hutchinson (MDH) method or the Horner Method. In either case, graphs of this test shall be submitted to include either the MDH or Horner Plot and a Log-Log plot after injection. From these plots, the transmissivity md-ft/cp, the permeability in md, and the dimensionless skin factor shall be calculated and submitted to the Water Quality Division with the next quarterly report after the test is done.

The permittee shall monitor the quality of the injected water on an approved schedule. The Administrator may add or delete parameters to be analyzed or change reporting frequencies. The parameters identified in **Table 4** shall be analyzed by the listed methods and reported quarterly.

**Table 4 (Quarterly Sampling Schedule)**

EPA Analytic Method	Parameter Analyzed	CAS Number	Proposed Permit Limit or UCL (mg/L)
SM2540	Total Dissolved Solids	None	*
376.1	Hydrogen Sulfide	7783-06-4	*
SM4500H+B	pH	None	>2 - <11 s.u.
206.5	Arsenic (metal)	7440-38-2	*
239	Lead (metal)	7439-92-1	*
245	Mercury (metal)	7439-97-6	*
375.2	Sulfate	None	*
420	Total Phenolic Hydrocarbons	108-95-2	*
624	1,1,1,2-Tetrachloroethane	630-20-6	*
624	1,1,1-Trichloroethane	71-55-6	*
624	1,1,2,2-Tetrachloroethane	79-34-5	*
624	1,1,2-Trichloroethane	79-00-5	*
624	1,1-Dichloroethane	75-34-3	*
624	1,1-Dichloroethene	75-35-4	*
624	1,1-Dichloropropene	563-58-6	*
624	1,2,3-Trichlorobenzene	87-61-6	*
624	1,2,3-Trichloropropane	96-18-4	*
624	1,2,4-Trichlorobenzene	120-82-1	*
624	1,2,4-Trimethylbenzene	95-63-6	*
624	1,2-Dibromo-3-chloropropane	96-12-8	*
624	1,2-Dibromoethane	106-93-4	*
624	1,2-Dichlorobenzene	95-50-1	*
624	1,2-Dichloroethane	107-06-2	*
624	1,2-Dichloropropane	78-87-5	*
624	1,3,5-Trimethylbenzene	108-67-8	*
624	1,3-Dichlorobenzene	541-73-1	*
624	1,3-Dichloropropane	142-28-9	*

624	1,4-Dichlorobenzene	106-46-7	*
624	2,2-Dichloropropane	590-20-7	*
624	2-Chloroethyl vinyl ether	110-75-8	*
624	2-Chlorotoluene	95-49-8	*
624	2-Hexanone	591-78-6	*
624	4-Chlorotoluene	106-43-4	*
624	Acetone	67-64-1	*
624	Acetonitrile	75-05-8	*
624	Acrolein	107-02-8	*
624	Acrylonitrile	107-13-1	*
624	Benzene	71-43-2	*
624	Bromobenzene	108-86-1	*
624	Bromochloromethane	74-97-5	*
624	Bromodichloromethane	75-27-4	*
624	Bromoform	75-25-2	*
624	Bromomethane	74-83-9	*
624	Carbon disulfide	75-15-0	*
624	Carbon tetrachloride	56-23-5	*
624	Chlorobenzene	108-90-7	*
624	Chlorodibromomethane	124-48-1	*
624	Chloroethane	75-00-3	*
624	Chloroform	67-66-3	*
624	Chloromethane	74-87-3	*
624	cis-1,2-Dichloroethene	156-59-2	*
624	cis-1,3-Dichloropropene	10061-01-5	*
624	Dibromomethane	74-95-3	*
624	Dichlorodifluoromethane	75-71-8	*
624	Ethyl Acetate	141-78-6	*
624	Ethylbenzene	100-41-4	*
624	Hexachlorobutadiene	87-68-3	*
624	Iodomethane	74-88-4	*
624	Isopropylbenzene	98-82-8	*
624	m+p-Xylenes	1330-20-7	*
624	Methyl ethyl ketone	78-93-3	*
624	Methyl isobutyl ketone	108-10-1	*
624	Methyl tert-butyl ether (MTBE)	1634-04-4	*
624	Methylene chloride	75-09-2	*
624	n-Butylbenzene	104-51-8	*
624	n-Propylbenzene	103-65-1	*
624	Naphthalene	91-20-3	*
624	o-Xylene	95-47-6	*
624	p-Isopropyltoluene	99-87-6	*
624	sec-Butylbenzene	135-98-8	*
624	Styrene	100-42-5	*

624	tert-Butylbenzene	98-06-6	*
624	Tetrachloroethene	127-18-4	*
624	Toluene	108-88-3	*
624	trans-1,2-Dichloroethene	156-60-5	*
624	trans-1,3-Dichloropropene	10061-02-6	*
624	Trichloroethene	79-01-6	*
624	Trichlorofluoromethane	75-69-4	*
624	Vinyl acetate	108-05-4	*
624	Vinyl chloride	75-01-4	*
624	1,2-Dichloroethene (Total)	540-59-0	*
624	BETX, Total	BETX	*
624	Xylenes, Total	1330-20-7	*

All chemical parameters listed in this permit are expressed in mg/L unless otherwise noted. pH is expressed in standard units. The permittee shall use the above listed analytical methods unless an alternate method is first approved by the Water Quality Division.

The above upper control limits (UCL) are not to be exceeded in any sample. UCLs are derived from Wyoming Water Quality Rules and Regulations, Chapter 13, Appendices A and B, and Chapter 8. The lowest UCL shall apply if there are any conflicts between rules and parameters. Exceedances of these values are a violation of this permit and shall require notification under Section K of this permit. Failure to perform and report analyses in accordance with the prescribed schedule and method is also a violation of this permit. \*The undefined permit limit or UCL's are only for exempted wastes that are injected. Any wastes that are non-exempt require analysis for hazardous waste limits and approval by the Department prior to injection.

#### **J. Test Procedures**

All samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. All samples taken shall include a trip blank of distilled water for each sampling date and a duplicate sample at least once per year.

All required analyses shall be conducted in compliance with Wyoming Water Quality Rules and Regulations, Chapter 8, Section 7.

#### **K. Records and Reports**

1. The permittee shall retain 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 3 years from the date of the report or application.
2. The permittee shall give notice to the Administrator as soon as possible of any planned physical alterations or additions to the permitted facility.

3. The permittee shall give advance notice to the Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
4. The permittee shall use electronic data deliverable (EDD) reporting when required by the Administrator.
5. Monitoring results shall be reported at intervals specified in Section D and/or Section I of this permit.
6. 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 fourteen (14) days following each schedule date.
7. The permittee shall report any noncompliance which may endanger health or the environment, orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. The report should include:
  - a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to a usable groundwater of the state.
  - b. Any noncompliance with a permit condition or malfunction of the discharge (injection) system which may cause fluid migration into or between usable groundwaters of the state.
  - c. A written submission shall be provided within five (5) days of the time the permittee becomes aware of the circumstances. This written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
8. The permittee shall report all instances of noncompliance not reported otherwise at the time monitoring reports are submitted.
9. Where the permittee becomes aware that it failed to submit any relevant acts in a permit application, or submitted incorrect information in a permit application or in any report to the Administrator, it shall promptly submit such facts or information.
10. The permittee shall retain all records concerning the nature and composition of injected fluids until five (5) years after completion of any specified plugging and abandonment procedures. The Administrator may require the owner/operator to deliver the records to the Administrator at the conclusion of the retention period.
11. A subsurface discharge (injection) well may not commence subsurface discharge (injection) until, following public notice and an opportunity for hearing, a groundwater

pollution control permit has been issued by the department for the proposed operation, and:

- a. Well construction is complete and the permittee has submitted notice of completion of construction to the Administrator, and
- b. The Administrator has inspected or otherwise reviewed the subsurface discharge (injection) well and finds it in compliance with the conditions of the permit; or the permittee has not received notice from the Administrator of intent to inspect or otherwise review the facility within fourteen (14) days of the well completion notice (above) in which case prior inspection or review is waived, and
- c. Well mechanical integrity testing has been proven or demonstrated to the satisfaction of the Administrator.

12. The quarterly report of operations for this well shall include the following information:

- a. The minimum, average and maximum daily injection rate for each month of the quarter. The page showing the maximum injection rate shall also show the maximum permitted injection rate for comparison.
- b. The minimum, average, and maximum daily injection pressure for each month of the quarter. The page showing the maximum injection pressure shall also show the maximum permitted injection pressure for comparison.
- c. The total injection volume in barrels for each month of the quarter, the total for the quarter, the total cumulative injected to date.
- d. The maximum and minimum annulus pressure for each month of the quarter.
- e. Any permit exceedances within the quarter.
- f. Any tests run during the quarter. This includes but is not limited to the results on any Mechanical Integrity Tests, Pressure Falloff Tests, Step Injection Tests, or any well workovers.
- g. Quarterly reports are due in the Cheyenne office of the Water Quality Division no later than thirty (30) days after the end of each calendar quarter.

13. The annual report of operations on this well shall include the following additional information:

- a. A graphical representation of the injection pressure and volume for the previous five year's operation. This graph shall have the dates of the year on the abscissa and the pressure and volume as the ordinate.

b. Graphical representations of the quality of the injected water overtime. These graphs shall show the injected quality for the previous five year's operation and shall be prepared on appropriate scales to show the variation.

c. Analytical results required by Section I of this permit.

14. A comprehensive report for an aborted or curtailed operation authorized by this permit shall be submitted to the Administrator within thirty (30) days of complete termination of the injection (discharge) or associated activity, in lieu of an annual report.

#### **L. Permit Actions**

This permit is issued for a period of ten (10) years. If the permittee wishes to continue injection after the expiration date of this permit, he shall apply to the Administrator prior to the expiration date of this permit. An expired permit continues in effect until a new permit is issued or the permit is terminated by the Administrator.

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

The filing of a request by the permittee, or at the instigation of the Administrator, for permit modification, revocation, termination, or notification of planned changes or anticipated noncompliance shall not stay any condition of this permit.

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

1. Violation of this permit;
2. Obtaining a permit by misrepresentation of facts in the application; or
3. Failure of the casing, cement or the confining layer.

This permit will be reviewed at least once every five (5) years, and may be reviewed more frequently. A permit may be modified at any time as may be required, including for conformity with changes in regulations or standards which occur after the permit was issued. A permit may be modified in whole or part in order to apply more or less stringent standards; or prohibitions for toxic or other substances present in the permittees discharge as may be ordered by the Council.

#### **M. Mechanical Integrity**

Mechanical integrity shall be maintained continuously and reviewed at least once every five (5) years. The test used to determine mechanical integrity shall be a two part test approved by the Administrator.

Part I of the mechanical integrity test shall demonstrate the absence of leaks through the packer, tubing, casing, and wellhead. Prior to injection and at least once every five (5) years, and more frequently if required by the Administrator, the casing tubing annulus of each of these wells shall be pressure tested to 2,000 psig. A successful test shall show that there has been less than 10% pressure loss after fifteen (15) minutes at 2,000 psig.

Part II of the mechanical integrity test shall demonstrate the absence of fluid movement behind the casing. Prior to commercial injection and at least once every five (5) years, and more frequently if required by the Administrator, each of these wells shall be logged using a radioactive tracer (RTS) log and a temperature log and the results and their interpretation shall be reported to the Water Quality Division along with the next quarterly report.

Other types of logs may be substituted for Part II of the mechanical integrity test with the prior written approval of the Water Quality Division.

Should any of the above tests show a lack of mechanical integrity, the Water Quality Division shall be notified by telephone within twenty-four (24) hours and with a written report within seven (7) days. In the case of a failed mechanical integrity test, the well shall be immediately shut-in. Injection shall not resume until the well has been repaired and a complete mechanical integrity test has been passed and the Water Quality Division has approved these tests.

If at any time injection occurs in any zone not within the permitted receiver, a permit violation has occurred. The operator shall prepare an estimate of the volume and quality of all wastewaters which were injected outside of the permitted receiver. In the case where any aquifer meeting the standards for Class I through IV under Wyoming Water Quality Rules and Regulations, Chapter 8, has been contaminated due to out of zone injection, the operator shall prepare and implement a plan to recover these solutions and inject them into the proper receiver.

#### **N. Plugging and Abandonment**

The permittee shall notify the Administrator at such times as the permit requires before conversion or abandonment of the well. Immediately following the permanent cessation of subsurface discharge or related activity, or where a well has not been completed, the applicant/permittee shall notify the director and follow the procedure prescribed by the director for plugging and abandonment or the discontinuance of related activities:

The well plugging and abandonment procedures shall be as stringent as Appendix E-11 and E-12 of the permit application dated December 18, 2006.

In no case shall the abandonment procedure be less stringent than required by the EPA nationwide for Class I non-hazardous waste wells at the time of abandonment.

Within thirty (30) days after plugging and abandonment of any wells covered by this permit, the permittee shall submit a plugging and abandonment report, detailing the compliance with the compliance and abandonment procedures outlined in the original permit application, and

describing any deviation from the original plan. The abandonment shall include surface reclamation of the well site.

**O. Duties of the Permittee**

The permittee shall give advance notice to the Administrator as soon as possible of any planned physical alteration or additions other than authorized operation and maintenance to the permitted facility and receive authorization prior to implementing the proposed alternation or addition.

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

Any modification which may result in a violation of a permit condition shall be reported to the Administrator, and any modification that will result in a violation of any permit conditions shall be reported to the Administrator through the submission of a new or amended permit application.

The permittee shall report all instances where he becomes aware that he failed to submit any relevant facts in the permit application, or where he submitted incorrect information in a permit application or in any report to the Administrator, and shall promptly submit such facts or information.

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

**P. Financial Responsibility**

The permittee is required to maintain financial responsibility and resources in a form approved by the director, to close, plug and abandon the discharge operation, and reclaim the surface facilities in a manner prescribed by the director. An irrevocable Letter of Credit with Western National Bank of Midland Texas in the amount of Forty-Three Thousand Four Hundred Sixty-Seven Dollars (\$43,467) has been accepted. This financial instrument or a replacement financial instrument shall be maintained as long this well is covered under this permit.

**Q. Special Permit Conditions**

In addition to the conditions required of all permits, the Administrator has established conditions as required for monitoring, schedules of compliance, and such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water. These conditions are established in conformance with Chapter 13, Section 9(e).

**R. Signatories Requirement**

All reports filed in conjunction with this permit shall contain 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."

All reports required by this permit and other requested information shall be signed as follows:

For a corporation – by a principal executive officer of at least the level of vice-president;

For a partnership or sole proprietorship – by a general partner or the proprietor, respectively;

For a municipality, state, federal, or other public agency – by either a principal executive officer or ranking elected official;

or

By a duly authorized representative for any of the above. A person is a duly authorized representative only if:

1. The authorization is made in writing by one of the prescribed principals;
2. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
3. The written authorization is submitted to the Administrator.

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the Administrator prior to or together with any reports or information, to be signed by the new authorized representative.

#### **S. Noncompliance**

The permittee shall comply with all conditions of the permit. Any permit noncompliance constitutes a violation of Wyoming Water Quality Rules and Regulations, Chapter 13 and is grounds for enforcement action, permit termination, revocation, or modification. Conformed noncompliance resulting in an excursion shall be reported to the Administrator orally within twenty-four (24) hours, and a written submission shall be provided within five (5) days of the time the permittee becomes aware of the excursion. The written report shall contain the sections specified in Section K of this permit. Any permit noncompliance constitutes a violation of this permit.

The filing of any 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.

**T. Permit Transfer**

Any transfer of this permit shall be accomplished by the submission of the proper forms for permit transfer to the Administrator. Transfer of this permit must first be approved by the Administrator, and the Director, and no transfer shall be approved unless the proposed permittee agrees to bring any and all noncompliance issues into compliance with this permit.

The permittee is alone responsible for the operation of the facility covered by this permit. Sale of the facility and subsequent operation of this facility by another is a violation of this permit unless a transfer of this permit has first been accomplished.

**U. Property Rights**

This permit does not convey any property rights or any exclusive privilege. This permit does not authorize injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

**V. Severability**

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

The provisions of this permit are severable, and if any provision of the 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.

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
"AS-BUILT" PERMIT TO CONSTRUCT

PERMIT NO. 06-864

FORD RANCH CBM DEVELOPMENT AREA PHASE I: FORD RANCH PLAYA

This permit hereby authorizes the applicant:

Storm Cat Energy (USA) Operating Company  
Attn.: Mr. Keith Knapstad  
1125 17<sup>th</sup> Street, Suite 2310  
Denver, CO 80202

to have installed compliance monitoring wells according to the procedures and conditions of the application number 06-864. The facilities are proximal to coalbed methane produced water impoundments located in Township 58N, Range 75W, Sections 27 in the county of Campbell, in the State of Wyoming. All construction, installation, or modification allowed by this permit has been completed.

The issuance of this permit confirms that the Wyoming Department of Environmental Quality (DEQ) has evaluated the application submitted by the permittee and determined that it meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the engineer's design are the responsibility of the permittee, owner, and operator.

Nothing in this permit constitutes an endorsement by DEQ of the construction or the design of the facility described herein. This permit verifies only that the submitted application meets the design and construction standards imposed by Wyoming statutes, rules and regulations. The DEQ assumes no liability for, and does not in any way guarantee or warrant the performance or operation of the permitted facility. The permittee, owner and operator are solely responsible for any liability arising from the construction or operation of the permitted facility. By issuing this permit, the State of Wyoming does not waive its sovereign immunity.

The permittee shall allow authorized representatives from DEQ to enter and inspect any property, premise or place on or at which the facility is located or is being constructed or installed for the purpose of investigating actual or potential sources of water pollution, and for determining compliance or non-compliance with any rules, regulations, standards, permits or orders.

Nothing in this permit shall be construed to preclude the institution of any legal action or other proceeding to enforce any applicable provision of law or rules and regulations. It is the duty of the permittee, owner and operator to comply with all applicable federal, state and local laws or regulations in the exercise of its activities authorized by this permit.

The issuance of this permit does not convey any property rights in either real or personal property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

The permittee shall operate the permitted facility in accordance with the statements, representations, procedures, terms and conditions of the permit application, supporting documents and permit. This permit

does not relieve the permittee from any duty to obtain any other permit or authorization that may be required by any provision of federal, state or local laws.

In carrying out its activities authorized by this permit, the permittee, owner and operator shall comply with all of the following permit conditions:

- 1 of 3: The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality/ Water Quality Division, Groundwater Program, 1866 South Sheridan Avenue, Sheridan, WY 82801, 307-673-9337, fax 307-672-2213, in accordance with the provisions of Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations of any changes or modifications which are not consistent with the terms and conditions of this permit.
- 2 of 3: The applicant will provide immediate oral or written notice to the Wyoming Department of Environmental Quality/ Water Quality Division, Groundwater Program, 1866 South Sheridan Avenue, Sheridan, WY 82801, 307-673-9337, fax 307-672-2213 when discharge to each impoundment covered under this permit commences.
- 3 of 3: **Monitoring Requirements:**  
Groundwater monitoring beneath the impoundments shall be performed on a quarterly basis unless trigger values are exceeded or written authorization is received from the WDEQ to discontinue quarterly sampling.

Reporting results of quarterly monitoring are due by January 15<sup>th</sup>, April 15<sup>th</sup>, July 15<sup>th</sup>, and October 15<sup>th</sup> of each year. The first set of data required by this permit shall be due by **January 15, 2008**.

The groundwater reports shall include the measurement of static water level of groundwater at monitoring wells MW-01R and MW-02. The parameters listed in the table below are required for groundwater compliance monitoring beneath the listed impoundment.

**Ford Ranch Playa**

Parameter	Ford Ranch Playa MW-01R	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
Arsenic	0.002	≥ 0.16	0.2
Selenium	ND	≥ 0.04	0.05
Sulfate	312	≥ 2400	3000
Total Dissolved Solids (TDS)	780	≥ 4000	5000
pH	6.56	≤ 6.5	6.5 – 8.5 (s.u)

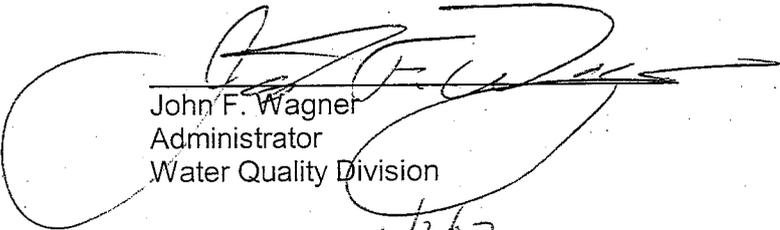
Trigger values, specific to the groundwater samples at each impoundment, have been assigned to each constituent and are also listed above. If one or more of these trigger values is exceeded during a quarterly sampling event, monthly sampling of the groundwater for all listed parameters is required until written authorization is received from the WDEQ to discontinue monthly monitoring. The monthly analytical results are due by the 15<sup>th</sup> day of each month.

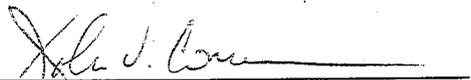
If groundwater monitoring reveals a pH measurement of 6.5 or less, the WDEQ may require sampling and analysis of groundwater for the following additional parameters: aluminum, boron, cadmium, chromium, copper, lead and zinc.

The analytical results for each sampling event, along with impoundment and monitor well location information must be submitted in the Excel spread sheet "Compliance Monitoring Data Reporting", which can be found on the WDEQ website at the following address: (<http://deq.state.wy.us/wqd/groundwater/pollution.asp>). These data shall be submitted electronically on the due dates established above to the following department address: [cbmgroundwater@state.wy.us](mailto:cbmgroundwater@state.wy.us). In addition, the accompanying analytical laboratory reports must also be submitted either electronically (pdf format) or hard copy via mail to the WDEQ, Sheridan office at the address listed above.

4 of 4. Any exceedance of the water quality standards listed above will be considered a violation of this permit. If an exceedance of groundwater standards occurs as a result of the operation of the impoundment, the WDEQ may require further investigation of the groundwater impacts, remediation of the groundwater impacts, and cessation of discharge into the impoundment.

AUTHORIZED BY:

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

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

11/26/07  
\_\_\_\_\_  
Date of Issuance

AWV/WDF/KDF/cs/7-0940



**GROUNDWATER PROGRAM**  
**REVIEW COMMENTS:**  
**PLANS/SPECIFICATIONS/PROPOSALS/REPORTS**

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
1866 South Sheridan Avenue  
Sheridan, WY 82801  
Phone: 307-672-6457

**PERMIT TYPE:**   CBM: Groundwater Compliance Monitoring Program

**WATER QUALITY DIVISION REFERENCE (PERMIT) NUMBER:** 06-864

**SITE (POD) NAME:**   FORD RANCH POD: Phase 1: Ford Ranch Playa

**APPLICANT:**           Storm Cat Energy (USA) Operating Company  
                          Attn.: Mr. Keith Knapstad  
                          1125 17<sup>th</sup> Street, Suite 2310  
                          Denver, CO 80202

**CONSULTANT:**         CBM Associates, Inc  
                          Attn.: T. C. Nissen  
                          500 W. Lott  
                          Buffalo, WY 82834

**LOCATION:**             Drainage: Unmanned tributary to Bitter Creek  
                          tributary to Powder River  
                          County: Campbell  
                          Township 57 North; Range 75 West

**WYPDES No:**         Discharge Permit: WY0054992

**DATE ON ORIGINAL REPORT:**   December 5, 2006

**REVIEWING OFFICIAL:** Pete Vogel, Geologic Project Analyst

**DATE OF THIS REVIEW:**   October 11, 2007

**ACTION:**   Compliance Monitoring Plan authorized for Ford Ranch CBM  
                  Development Area, Phase 1: Ford Ranch Playa pursuant to conditions  
                  on permit # 06-864.

**AWV/WDF/KDF/cs/7-0940**

**COMMENTS: GROUNDWATER SECTION**

**1.0 SITE SUMMARY:**

**1.1 Site Description.**

Watershed Name: Internal drainage (playa) near an unnamed tributary to Bitter Creek, tributary to Powder River

Groundwater Classification:

- Class 1 (domestic)
- Class 2 (agricultural)
- Class 3 (livestock) 1

Basis for Classification: Laboratory analysis of groundwater indicates ambient water quality meets Water Quality Rules and Regulations Chapter 8 Class III standards. The ambient groundwater exceeds Class I standards for TDS and exceeds Class II standards for sulfate (ref: Table 1- WQRR Chapter 8).

**Table 1. Basis for Ground Water Classification by impoundment Name covered under Permit 06-864**

Impoundment Name	Down Gradient Monitoring Well	Sulfate Concentration	TDS Concentration	SAR Calculation	Overall Groundwater Class
Ford Ranch Playa	Ford Ranch Playa MW-01R	312	780	0.9	III

**Description of Hydrogeology:**

Groundwater occurs in MW-01R (replacement) at the bed boundary of a clinker and coal. The depth to water is 34 feet at an elevation of 3786 feet MSL. A second well MW-02 was drilled approximately 200 feet northwest of MW-01R and approximately 41 feet higher (surface elevation). This well intercepted the same clinker and coal units, however, no groundwater was encountered. Drilling continued to a depth of 115 feet. While no water was noted in the drill cuttings, a completion was attempted between 67 and 85 feet in a moist siltstone. This zone proved to be dry as well.

Rubber Tire Spring P157052W (Spring) is located approximately 900 feet northwest of MW-01R at an elevation of approximately 3780 feet. It is reported in the subsurface investigation report that: "The water bearing zone at the Ford Ranch Playa MW-01R well is considered to be hydraulically connected to the Rubber Tire Spring." Aerial photo interpretation (Google Earth) suggests that the Spring may be the result of a lineament feature (fracture zone) trending nearly N45E from the playa at least to the intersection with Bitter Creek near the center of Section 23, T.45N, R. 75W.

Field investigation found a very low flow from the spring although the operator reported that there was no flow at the time of drilling. This flow was noticeable for an estimated distance of 200 to 300 feet before infiltrating into the Bitter Creek alluvium. This limited flow or seepage may increase as a result of CBM discharge to the playa.

**Table 2. Names of Impoundment covered under Permit 06-864**

Impoundment Name	Capacity (acre/ft)	Qtr	Qtr	Section	Town.	Range	Down gradient Monitoring Well
Ford Ranch Playa	82.6	SWNE		27	57N	75W	Ford Ranch Playa MW-01R

No other domestic, agricultural or livestock wells are noted in the immediate area that will be impacted

## 2.0 MONITORING AND REPORTING REQUIREMENTS

Groundwater monitoring at the impoundments shall be performed on a quarterly basis until further notice and shall include the following information:

- Measurement of static water level of groundwater at wells: MW-01R, MW-02
- Reporting results of quarterly monitoring and sampling to the department by January 15<sup>th</sup>, April 15<sup>th</sup>, July 15<sup>th</sup>, and October 15<sup>th</sup> of each year. The first set of data will be due by January 15, 2008
- The parameters listed in the tables below are required for groundwater compliance monitoring beneath the listed impoundment:

### Ford Ranch Playa

Parameter	Ford Ranch Playa MW-01R	Trigger Value (mg/L)	Class III Water Quality Standards (mg/L)
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Trigger values, specific to the groundwater samples at this impoundment, have been assigned to each constituent and are also listed above. If one or more of these trigger values is exceeded during a quarterly sampling event, monthly sampling of the groundwater for all listed parameters is required, with the analytical results due by the 15<sup>th</sup> day of each month. If groundwater monitoring reveals a pH measurement of 6.5 or less, the WDEQ may require sampling and analysis of groundwater for the following additional parameters: aluminum, boron, cadmium, chromium, copper, lead and zinc.

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**END OF REVIEW**