



1120 Lincoln Street, Suite 801  
Denver, CO 80203

May 4, 2015

Ms. Jessica Donahue  
1515 Wynkoop Street, Suite 500  
Denver, CO 80202

Re: Review of Form 28 Centralized E&P Waste Management Facility Permit  
Facility ID #441234, De Beque Water Station  
Black Hill Exploration & Production  
SESE Section 29, T8S, R97W, 6<sup>th</sup> PM, Mesa County, Colorado

Dear Ms. Donahue:

The Colorado Oil and Gas Conservation Commission (COGCC) has received and reviewed your submittal for the above referenced permit application for COGCC Facility ID 441234. At this time, the COGCC has the following comments:

Form 28 Centralized E&P Waste Management Facility Permit

1) Form 28, Attachment Checklist.

**COGCC Comment:** None.

2) Form 28, Question 1.

Is the site in a sensitive area? Answer: Yes

**COGCC Comment:** None.

3) Form 28, Question 2.

What are the average annual precipitation and evaporation rates for the site? Answer: Precipitation- 12.82 inches/year. Evaporation – 78.24 inches/year.

**COGCC Comment:** None.

3) Form 28, Question 3.

Has a description of the site's general topography, geology, and hydrology been attached?

Answer: Yes.

**COGCC Comment:** None.

4) Form 28, Question 4.

Has a description of the adjacent land use been attached? Answer: Yes.

**COGCC Comment:** None.

5) Form 28, Question 5.

Has a 1:24,000 topographic map showing the site location been attached? Answer: Yes.

**COGCC Comment:** None.

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Commissioners: Thomas L. Compton - Chairman, Richard Alward, John H. Benton, DeAnn Craig,  
James W. Hawkins, Tommy Holton, Andrew L. Spielman, Mike King, Dr. Larry Wolk

John W. Hickenlooper, Governor | Mike King, Executive Director, DNR | Matthew J. Lepore, Director



6) Form 28, Question 6.

Has a site plan showing drainage patterns, diversion or containment structures, roads, fencing, tanks, pits, buildings and any other pertinent construction details been attached? Answer: Yes.

**COGCC Comment:** None.

7) Form 28, Question 7.

If site is not owned by the operator, is written authorization of the surface owner attached?

Answer: Yes.

**COGCC Comment:** None.

8) Form 28, Question 8.

Has a scaled drawing and survey showing the entire section(s) containing the proposed facility been attached? Answer: Yes.

**COGCC Comment:** None.

9) Form 28, Question 9.

What measures have been implemented to limit access to the facility by wildlife, domestic animals or by members of the public? Answer: The site entire site will be fenced to limit access for people and animals. The ponds will have a floating cover to limit access for birds.

**COGCC Comment:** None.

10) Form 28, Question 10.

Is there a planned fire lane of at least 10 feet in width around the active treatment areas and within the perimeter fence? Answer: Yes.

**COGCC Comment:** None.

11) Form 28, Question 11.

Is there an additional buffer zone of at least 10 feet in width within the perimeter fire lane? Answer: Yes.

**COGCC Comment:** None.

12) Form 28, Question 12.

Have surface water diversion structures been constructed to accommodate a 100-year, 24-hour event? Answer: Yes.

**COGCC Comment:** None.

13) Form 28, Question 13.

Has a waste profile been calculated according to Rule 908.b.6? Answer: Yes.

**COGCC Comment:** None.

14) Form 28, Question 14.

Has facility design and engineering been provided as required by Rule 908.b.7? Answer: Yes.

**COGCC Comment:** None.

15) Form 28, Question 15.

Has an operating plan been completed as required by Rule 908.b.8? Answer: Yes.

**COGCC Comment:** None.

16) Form 28, Question 16.

Has ground water monitoring for the site been provided? Answer: Yes.

**COGCC Comment:** None.

17) Form 28, Question 17.

Has financial assurance been provided as required by Rule 704? Answer: Yes.

**COGCC Comment:** Currently, there is a \$500,000 bond in place as a condition of approval of Pit Facility ID: 439235 and Form 2A (Document Number 400556701). A Financial Assurance Cost Estimate was provided with the submittal. Prior to approval, financial assurance shall be provided. Black Hills can provide the approximate additional \$1.5M financial assurance, however, the COGCC is currently having a third party review the closure of the facility and prepare an independent closure cost estimate. Based on the third party review, the financial assurance may be less than the estimated \$2M or more than the estimated \$2M.

18) Form 28, Question 18.

Has a closure plan been provided? Answer: Yes.

**COGCC Comment:** None.

19) Form 28, Question 19.

Have local government requirements for zoning and construction been complied with? Answer: Yes.

**COGCC Comment:** None.

20) Form 28, Question 20.

Have permits and notifications required by local governments and other agencies been provided? Answer: Yes.

**COGCC Comment:** Are there any additional permit requirements from the Colorado Division of Water Resources (DWR) for the two "Minor Jurisdictional Dams" and from State of Colorado or Mesa County for the underground storage tank (UST) for the collection of oil/condensate, or any other permits?

Introduction:

**COGCC Comment:** Provide clarification of Black Hills operations and pipeline infrastructure in how fluids are transferred to and from the DeBeque Water Station.

See comments above to Question 20 regarding the DWR. Provide the appropriate permits approved by the DWR for the non-jurisdictional dam (Pond 1, Pit Facility ID: 439235) and for the minor jurisdictional dams (Ponds 2 and 3).

Form 28 Application Attachments:

**COGCC Comment:** None.

COGCC Rules:

**COGCC Comment:**

Rule 902.a.

Are the Hexprotec floating tiles acceptable to the Colorado Division of Park and Wildlife (CDPW) for the protection of waterfowl and other birds from coming in contact with water in the pits?

Rule 902.b.

The COGCC is not aware of the "Draft Policy Memorandum No. 01-14." "Produced Water Pond Dams."  
What is the source for this document?

Rule 902.c.

It is stated that, *"When produced water is returned to the facility it will run through a secondary oil skimming chamber located within the proposed pump station before it will be stored in the lined Pond. Any oil or condensate collected from the skimming chamber will be stored in a buried tank outside of the building."*

- What is the capacity of the skimming chamber?
- What is the capacity of the buried tank (underground storage tank, UST)?
- What are the design elements of the UST?
- Does this UST need to be permitted by other agencies or entities?

Provide the location of these features on the Facility Layout drawing.

Rule 908.b.(9).B.

It is stated that, *"Black Hills has installed three monitoring wells to a depth of 100-feet (one up-gradient and two down-gradient) but has not encountered groundwater to a depth of 100 feet below ground surface.".....Black Hills request to be exempted from the groundwater monitoring requirements due to the significant depth to groundwater at this site and the construction of all ponds with dual liners and leak detection."*

- Provide construction details of the monitoring wells.
- What is the purpose for the three monitoring wells, as they were not completed to groundwater?
- What is the depth to groundwater at this Facility?

Several water wells are located within a one-mile radius and at least two water wells within a quarter of a mile and one-half mile. These well indicate the depth to static ground water up to 27 feet below ground surface (bgs). Please provide an explanation.

Exhibits:

**COGCC Comment:** Exhibit 1 is showing a "20' truck Access Road (10' Fire Lane with 10' buffer Zone), the leader is pointing to what appears to be an access road and not the Fire Lane and Buffer Zone. Please Clarify.

Provide detail of the skimming chamber and UST.

Appendix A - Geological Hazards Report:

**COGCC Comment:** None.

Appendix B - Hydrology and Storm Water Report:

**COGCC Comment:** None.

Appendix C - Closure Plan and Cost Estimate:

**COGCC Comment:** Currently, there is a \$500,000 bond in place as a condition of approval of Pit Facility ID: 439235 and Form 2A (Document Number 400556701). A Financial Assurance Cost Estimate was provided with the submittal. Prior to approval, financial assurance shall be provided. Black Hills can provide the approximate additional \$1.5 M financial assurance, however, the COGCC is currently having a third party review the closure of the facility and prepare an independent closure cost estimate. Based on the third party review, the financial assurance may be less than the estimated \$2M or more than the estimated \$2M.

Cost for the abandonment of monitoring wells in accordance with the State of Colorado Engineers Office (SEO) should be included. Soil sampling and confirmation soil sampling shall be included with a focus in those areas more susceptible to potential impact. The removal and disposal of the UST should be included.

Appendix D - Liability Insurance:

**COGCC Comment:** None.

Appendix E – Wildlife BMP Plan:

**COGCC Comment:** See previous comments regarding the Hexprotec floating tiles.

Appendix F – Spillway Policy Memorandum NO. 01-14:

**COGCC Comment:** See previous comment under Rule 902.b.

Appendix G - Facility Design:

**COGCC Comment:** See previous comments regarding non-jurisdictional dam and minor jurisdictional size dams, *“Observations of groundwater levels occurred during drilling as well as after completion of each borehole. Boreholes were drilled to depths of 30 feet and 100 feet below the ground surface, and groundwater was not observed or encountered in any of the borehole.”*

Moist, wet, or groundwater was not mentioned on the boring logs and it is stated elsewhere in the submittal that ground water was not observed in the monitoring wells. Clarify the statement, *“Observations of groundwater levels occurred during drilling as well as after completion of each borehole....”*

Provide monitoring well construction details.

Is there any emergency response control valves associated with this Facility?

Appendix G-1 – 60-Mil HDPE Liner Specifications:

**COGCC Comment:** None.

Appendix H – Climate Data:

**COGCC Comment:** None.

Appendix I – Water Analysis Data:

**COGCC Comment:**

Has any sampling and analysis been performed for volatile organic compounds (VOCs) and semi volatile organic compounds (SVOCs)?

The most current analytical data is from 2007 with data going back to 1996. Is there more recent analytical data (including VOCs and SVOCs) that is representative of fluids that will be placed in the Pit Facility's?

Provide pipeline testing results as part of the annual report submittal. Submit a GIS map with information in a suitable format showing the location of flowlines, type of pipe used in each segment, monitor points, valve locations, booster pump locations (if any) from the Homer Deep Unit, Winter Flats Unit and Horseshoe Canyon Unit. Provide and update as part of the annual report.

Appendix J – Operating Plan:

**COGCC Comment:** Provide schematic and location of truck load out.

See previous comments regarding the UST for oil and or condensate accumulation and storage.

See previous comments regarding the monitoring wells. If the wells are dry and groundwater is not anticipated, should they be properly abandoned?

Down gradient surface water features should be considered for water sampling and monitoring. Do the Reservoir Ditch and other canals and ditches flow continuously throughout the year?

Is the leak detection system for the three pits manual or automated?

Appendix K – Emergency Response Plan:

**COGCC Comment:** If and when emergency contact names and numbers change, COGCC shall be notified.

Appendix L – Mesa County Permits and Zoning:

**COGCC Comment:** See previous comments.

Form 28 Construction Drawings:

I. De Beque Station Produced Water Reuse facility – Pond 1:

- **COGCC Comment:** Sheet 21 of 49 shows a permanent seeded mound approximately 50 feet by 200 feet in dimension near the north west corner of Pond 1. This feature is noted as a "Berm" on Exhibit 4 (which is mislabeled as Exhibit 2) and appears to be located on the adjacent parcel to the west. Please clarify.

II. De Beque Station Produced Water Reuse Facility – Pond 2:

- **COGCC Comment:** Sheet 11 of 29 shows the top of berm sloping away from the pits at 3%, the typical berm cross section on sheet 6 of 29 shows a 2% cross slope, please clarify..
- **COGCC Comment:** *No portion of any pit that will be used to hold liquids shall be constructed on fill material, unless the pit and fill slope are designed and certified by a Professional Engineer (P.E.), subject to review and approval by the Director prior to construction of the pit. The construction and lining of the pit shall be supervised by a P.E., or their agent. The entire base of the pit must be in cut. Operators shall submit a Colorado P.E. approved/stamped as-built drawing of the pit within 30 days of construction*

*completion certifying the volume of the pit, and the available freeboard.*

III. De Beque Station Produced Water Reuse Facility – Pond 3:

- **COGCC Comment:** Sheet 11 of 28 shows the top of berm sloping away from the pits at 3%, the typical berm cross section on sheet 6 of 28 shows a 2% cross slope, please clarify..
- **COGCC Comment:** *No portion of any pit that will be used to hold liquids shall be constructed on fill material, unless the pit and fill slope are designed and certified by a Professional Engineer (P.E.), subject to review and approval by the Director prior to construction of the pit. The construction and lining of the pit shall be supervised by a P.E., or their agent. The entire base of the pit must be in cut. Operators shall submit a Colorado P.E. approved/stamped as-built drawing of the pit within 30 days of construction completion certifying the volume of the pit, and the available freeboard. None.*

Should you have any questions, please contact me at 303-894-2100 extension 5138.

Sincerely,



Alex Fischer, P.G.  
Environmental Supervisor-Western Colorado

Cc: Stephen C. Jenkins, P.E., C.P.E.S.C.  
North Central Area Engineer