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**Bureau of Land Management
Department of the Interior**

Wexpro Company®

Form 299 – Rights-of-Way Application
Powder Wash Evaporation Facility (PWEF) Plan of Development
Revised July 24, 2018

**POWDER WASH EVAPORATION FACILITY
PLAN OF DEVELOPEMENT
DOMINION ENERGY WEXPRO**

**Section 4, T11N, R97W
MOFFAT COUNTY, COLORADO**

The onsite inspection for this location was held on 08/01/2017. Present at the onsite were the following individuals:

Tim Barrett, Natural Resource Specialist, BLM
James Roberts, Supervisory Natural Resource Specialist, BLM
Tracy Perfors, Natural Resource Specialist, BLM
Shawn Wiser, Wildlife Biologist, BLM
Janell Corey, Realty Specialist, BLM
Alex Fischer, COGCC
Jerry Hoberg, Moffat County Planning Commission
Jon Lison, Field Foreman, Dominion Energy Wexpro.
Tammy Fredrickson, Senior Permit Agent, Dominion Energy Wexpro.

At the recommendation of the BLM Wildlife Biologist, Wexpro Company agreed to move the facility outside of the Sage Grouse Zone, to one of four recommended locations. The proposed facility is a non-commercial, centralized E&P waste management facility for the disposal and evaporation of produced water and will only serve Wexpro Company operations in the Powder Wash, Ace, and Jacks Draw fields of Moffat County, Colorado.

EXISTING ROAD:

- A. Proposed Evaporation Facility Site as staked: Refer to the Evaporation Facility location plat and area map.
- B. Proposed Access Route: Refer to general area map. All access roads are field roads within the Powder Wash, Ace, and Jacks Draw Unit boundaries or Moffat County Roads.
- C. Plans for Improvement and/or Maintenance: All existing roads utilized will be maintained in their present condition and no improvements will be made.

PLANNED ACCESS ROADS:

- A. Refer to Topo A and Topo B for access road information. The proposed access road is approximately 432' feet in length. Approximately 117 feet will be new construction and 315 feet is existing road. The entire access road will be

authorized under rights-of-way with the Bureau of Land Management, Little Snake Field Office.

Water turnouts are utilized to divert runoff water from the road ditch in such a manner as to not cause erosion. Surface disturbance and vehicular travel will be limited to the approved access route.

As shown on Figure 5, one 18 inch culvert will be placed on the channel bottom, on a firm uniform bed, which has been shaped to accept it and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted. The culvert will be approximately 24 feet in length, with inlet and outlet drainage within the 50 ft right-of-way. The snow will be removed from the road during winter as needed. Equipment used for snow removal will be equipped with shoes to keep the blade six (6) inches off the ground surface. Special precautions will be taken to ensure that equipment blades do not destroy vegetation.

Any topsoil (approximately 6 inches) removed in conjunction with road construction will be spread in the borrow area and will be seeded as discussed in the reclamation plan.

The access road will have six inches of pit run gravel laid over the entire surface length of the road. The running surface is currently 14 to 16 feet in width. A cattle guard and gate will be added to the existing road. Construction of the cattle guard will be in compliance with the "BLM Gold Book" standards.

- B. Maximum grade: Will not exceed 10 percent.
- C. Turnouts: Water turnouts will be constructed, within the 50' wide maximum disturbance, as required to divert runoff water from the road ditch in such a manner as to not cause erosion.
- D. Location (center line): Access road is existing. Surface disturbance and vehicular travel will be limited to the approved access route, additional areas as needed will be approved in advance.
- E. Surface materials will be taken from cuts along the access road and location. Spot surfacing may be required to maintain the running surface. The access road will be graveled to help with dust mitigation. Surfacing materials will be purchased from commercial suppliers in the marketing area.
- F. Topsoil will be removed in conjunction with road and location construction and may be used for reclamation purposes within the Powder Wash Field. A Sundry Notice for each project will be submitted prior to moving top soil.

SPECIFICATIONS OF PROPOSED FACILITIES:

- A. Refer to attached diagrams.
- B. All facilities are less than 25 feet in height, unless required by other governing agencies and / or safety concerns to exceed 25 feet and are existing.
- C. All above ground structures not subject to safety requirements will be painted Shale Green. All facilities will be painted as weather permits, but no later than one year after facility is in operation.
- D. Off load produced water tanks are and will be surrounded by a dike of sufficient capacity to contain 110% of the largest storage tank.
- E. All loading lines are currently placed inside the berm surrounding the tank battery.
- F. Emissions control equipment, when required by published –CDPHE Regulations, will be identified, permitted, and installed through CDPHE.
- G. Dominion Energy Wexpro will be taking all precautions to avoid any Hydrocarbons entering the evaporation pond. **Initial** Separation of Gas, Condensate and Produced Water occurs at the well location by interrupting the gas flow with pressure cuts, heat and forcing retention time in a three phase separator where the liquids and vapors are allowed to naturally separate from each other. Once the liquids have naturally separated and somewhat stabilize inside the vessel, mechanically controlled valves open at specifically set parameters allowing water to be dumped through piping to the water tank and condensate dumped through piping to the condensate tank. Once the liquids have entered the specified tanks, a **second** point of much more efficient natural separation takes place which is manually interfered with to move water and condensate to their appropriate tankage via pump truck transferring. The produced water would then be hauled, by trucks within the Powder Wash, Jacks Draw, and Ace field to the evaporation facility where the water truck driver connects hoses equipped with camlock fittings to a pump skid, engages the skids electrically driven offload pump which pumps the contents of the truck through a series of filters, to a skimmer tank which would serve as a **third** point of separation to extract any potential hydrocarbons. From the tanks, the produced water is transferred to a lined and netted skim pit, which would be approximately 100' x 58', this skim pit would serve as a **fourth** point of separation to separate any potential hydrocarbons. The produced water would then be transferred to the evaporation pond, which would be approximately 300' x 300'. The produced water is then pumped from the pond to Barracuda Wastewater evaporators where the water is forced through a stainless

steel manifold with 30 spray nozzles specifically designed to allow longer float times maximizing evaporation. The evaporators will be side mounted and placed on the upwind side of the pond. The Barracuda Evaporators have a fan airflow of 78 mph, flow rate of 87 gmp and water pressure is 80-100 psi with a 24 inch fan width. The evaporators will be electronically controlled to operate only during specific weather conditions related to humidity, wind speed and temperature with intent of minimizing or eliminating overspray. Wexpro Company intends to utilize SMI Smart H2O Software which will automatically shut down and start up the evaporator and pump based on different weather conditions. Accurate weather measurement includes sensors, and solar power to protect against disruption of the power supply. Control limits will be set a maximum 3 to 5 mph. rate in order to avoid overspray. When levels reach a certain criteria the evaporators will automatically shut off. Wexpro Company field operations will also conduct daily visual inspections of the evaporation pond, and the computer system checking for any alarms or malfunctions.

- H. The facility will operate 24 hours a day during spring, fall, and summer months for evaporation. The evaporation devices will be inactive during winter months, however, the facility will continue to operate. Contractors will be onsite during the hours of 7:00 AM and 5:00 PM during offloading of produced water from water trucks.
- I. There are no plans for facility lighting. The generator building and bird avert trailer will have mounted lights that will be run off the generator.
- J. The skim pit and evaporation pond will be lined with a 4 part HDPE liner system, which will also include a leak detection system. (Sheet 4 of the engineered drawings).
 - 1. Primary Liner, 60 mil min. HDPE.
 - 2. 200 Mil GSE Hypernet Geonet or Approved Equal.
 - 3. Secondary Liner, 60 mil min. HDPE.
 - 4. Geotextile Fabric or Bedding Material Under Bottom Liner.

The skim pit will be netted with 1" or less size holes. The Evaporation Pond will have a "Bird Avert" system in place, which was highly recommend by Roy Brown with the Fish and Wildlife Service as a deterrent for birds and other animals, specifically, birds covered under the Migratory Bird Treaty Act (MBTA) for our Wyoming facilities. The evaporation facility will be completely fenced to keep wildlife, livestock, etc., out of the facility.

- K. Construction of the Powder Wash Produced Water Evaporation Facility is expected to start the first part of August 2018 and will last approximately eight

weeks. Construction of the pond will take approximately two weeks followed by a six week period to install the pond liners. The tanks will be set and the generator will also be installed during this six week period. The entire facility will be fenced and this activity will take approximately two weeks. The entire Powder Wash Evaporation Facility will also be fenced.

For rental purposes and grant preparation, Wexpro Company is requesting a surface right-of-way area of **9.599 acres; including** the access road.

Construction equipment used will consist of the following:

Type of Equipment	Number
Scraper	2-3
Blade	1
Dozer	1
Trackhoe	1
Dump Truck	1-2
Skidsteer	1

L. Leak detection system:

- 4 Part HDPE Liner System, with leak detection for both Skim Pit and Evaporation Pond.
- Primary liner is 60 mil min. HDPE.
- 200 Mil GSE Hypernet Geonet or Approved Equal.
- Secondary liner, 60 mil min. HDPE.
- Geotextile Fabric or Bedding Material under bottom liner.

The Pond will be constructed with a pyramid shaped bottom and extended excavation at two down gradient corners where observation sumps will be installed and checked by operations personnel on a daily basis for early detection of liner breach.

4. SOURCE OF CONSTRUCTION MATERIALS:

All materials will be derived from cuts at the location and along the access road.

5. ANCILLARY FACILITIES: Camp facilities will not be required.

6. EVAPORATION FACILITY LAYOUT: Refer to attached diagrams.

Diversion ditches and erosion control devices are one example of structural best management practices (BMP) used for erosion and sediment control. Diversion ditches will be constructed to direct run off away from unprotected slopes and to direct sediment

laden runoff to a sediment trapping structure.

Typically, perimeter storm water controls are installed during clearing and grading of the site or immediately after construction. A third party or company representative will then select and install additional best management practice (BMP) storm water controls. BMP's will be evaluated and modified, if necessary, following reclamation. Please refer to the Storm Water Pollution Prevention Plan.

7. PLANS FOR RESTORATION OF THE SURFACE:

During construction, all woody vegetation and topsoil material will be removed from the location and stockpiled.

All areas of the Powder Wash Evaporation Facility not needed for operations will be reclaimed and reseeded as per the attached Reclamation Plan.

An annual weed spraying program is in place within this field and weeds are controlled through the use of herbicides to prevent the intrusion of noxious or invasive weeds.

At the end of the evaporation facility life, an estimated 30 years, the entire location will be re-contoured to blend with the existing terrain and reseeded. At that time a reclamation plan will be submitted for approval.

An estimate of the cost for reclamation, closure, and abandonment of the proposed facility has been included with this submittal. Prior to the commencement of construction, Wexpro Company will provide the required financial assurance to the Bureau of Land Management.

There will be approximately 9.599 disturbed acres including the access road. This includes the following:

Fenced in Facility Area	6.49 Acres
Topsoil Stockpile	.508 Acres
Soil Stockpile	2.103 Acres
Access Road with 50' Right-of-way	.497 Acres
Total Acreage:	9.598 Acres

After interim reclamation, facility will be reduced to 6.987 acres.

8. SURFACE AND MINERAL OWNERSHIP: Surface ownership along the proposed new access road and the Evaporation Facility site are both Federal.

9. OTHER INFORMATION:

The dirt contractor will have a copy of any additional stipulations and the surface use plan on-site during the construction operations.

A Class III Cultural Resource Inventory (17-WAS-251) was submitted on December 26, 2017. The cover letter indicates a date of December 26, 2015 which is incorrect. The actual report is accurately dated as December 26, 2017. Also a Paleontological Field Survey was completed for the evaporation facility site. Both reports have been forwarded to the BLM LSFO.

Additional applications have been filed with the following agencies:

1. Colorado Oil and Gas Conservation Commission: Form 2A, Form 27.
2. Colorado Department of Public Health & Environment: For all associated equipment.
3. Moffat County: Conditional Use Permit – Approved 6/19/18

All plans have been included as an attachment to this submittal and are considered to be a part of this plan of development.

Other Reasonable Alternatives Considered:

- JC Donnell 17 Injection Well – In December 2010 Wexpro Company applied for and received approval to convert the JC Donnell 17 well into a water injection well for the purpose of disposing produced water into the Wasatch formation. Wexpro's attempts to inject produced water were unsuccessful due to the well plugging off. The last stimulation work to restore injectivity was unsuccessful. This well is no longer able to take fluid and has become uneconomical. Wexpro Company is in the process of removing equipment and submitting plug and abandonment procedures.
- Off-site Commercial Disposal – Wexpro Company currently trucks produced water approximately 70 miles round trip on a daily basis. In addition to the added truck traffic and wear and tear on county and federal roads; Wexpro Company's costs directly affect the consumer's natural gas costs. Wexpro Company has an obligation to keep the cost of service to a minimum.

OPERATORS REPRESENTATIVE

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