



BEAR DEN PHASE 2 PROJECT

Plan of Development

APPENDIX F

Storm Water Pollution Prevention Plan



BEAR DEN PHASE 2 PROJECT

Plan of Development

Storm Water Pollution Prevention Plan

**Prepared for:
BUREAU OF LAND MANAGEMENT**

MAY2014

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ATTACHMENTS

Attachment 1	Storm Water Construction General Permit
Attachment 2	Contractor Certification for Implementation of Storm Water Pollution Prevention Plan

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REVISION SCHEDULE

This Storm Water Pollution Prevention Plan (SWPPP) will be revised and updated to address changes in site conditions, new or revised government regulations, and additional on-site storm water pollution controls as necessary.

All revisions to this SWPPP must be documented on the SWPPP Revision Documentation Form (below) and include the date and author of the revision and signature of an authorized company representative. The authorized facility representative who approves the SWPPP should be an individual at or near the top of the facility's management organization, such as the President, Vice President, Construction Manager, Site Supervisor, or Environmental Manager. The signature of this representative attests that the SWPPP revision information is true and accurate. Previous authors and facility representatives are not responsible for the revisions.

Bear Den Phase 2 Project Storm Water Pollution Prevention Plan Revision Documentation Form			
Number	Date	Author	Company Representative Signature
1			
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1.0 INTRODUCTION

Enable Bakken Crude Services, LLC (EBCS) developed this Storm Water Pollution Prevention Plan (SWPPP) for the proposed Bear Den Phase 2 Project (Project). All temporary off-site material storage areas associated with the Project are also covered by this SWPPP. This SWPPP was developed following the guidelines required for the receipt of authorization to discharge storm water under the North Dakota Department of Health's Construction General Permit NDR10-0000 (see Attachment 1) issued under the North Dakota Pollutant Discharge Elimination System (NDPDES). A copy of this SWPPP shall be retained on site during construction. If an adequate on-site location to store this SWPPP is not available, the SWPPP will be kept at a reasonable local site. If the SWPPP is kept off-site, the location of the SWPPP, along with the phone number of a contact person, shall be posted on site. After construction, this SWPPP will be kept at a reasonable local site. The Project's construction contractor shall read this SWPPP and sign the attached *Contractor Certification for Implementation of the Storm Water Pollution Prevention Plan* (Attachment 2) prior to commencing with construction.

2.0 SITE DESCRIPTION

Description of Construction Activity

EBCS proposes to construct, install, own, operate, and maintain pipeline crude oil and produced water gathering pipeline system and associated facilities in order to provide oil and water transportation services for a number of existing and/or proposed oil wells in McKenzie County, North Dakota. The Bear Den Phase 2 Project facilities will include:

- approximately 14.5 miles of 3- to 8-inch-diameter welded steel pipeline (i.e., the crude oil gathering pipeline system);
- approximately 14.5 miles of 3- to 6-inch diameter composite pipeline (i.e., the produced water gathering pipeline system);
- approximately 14.5 miles of fiber optic cable to be laid concurrently with the pipeline facilities and within the excavated pipeline trenches;
- automated wellhead facilities at each of the eight well pad sites to be serviced by the Project, with each wellhead facility typically including:
 - a Lease Automatic Custody Transfer (LACT) unit, which consists of oil measurement/metering and an electric, 100-hp pump (with provision for the addition of a future booster pump if system hydraulics and pressures dictate);
 - produced water measurement/metering and a 25-hp electric pump (with provision for the addition of a future booster pump if system hydraulics and pressures dictate);
 - pig launcher for the crude oil gathering pipeline;
 - pig launcher for the produced water gathering pipeline;
 - automated block valves; and
 - yard piping;

- Four lateral pipeline interconnect sites at each of the gathering pipeline lateral interconnects, with each site being either fenced or barred, and including:
 - pig launcher/receiver for the crude oil gathering pipelines;
 - pig launcher/receiver for the produced water gathering pipelines; and
 - automated block and check valves for the crude oil gathering pipeline;
 - automated block and check valves for the produced water gathering pipelines; and
- associated ancillary facilities (e.g., cathodic protection test leads and ground beds, pipeline markers, etc.).

Table 2-1, below, summarizes the temporary and permanent land requirements associated with the project.

TABLE 2.1						
Bear Den Phase 2 Project						
Temporary and Permanent Land Requirements (acres) Associated with the Project's Pipeline Facilities						
Pipeline Segment	Location		Land Requirements			Landowner
	Milepost In	Milepost Out	Temporary Workspace	Permanent Easement	Additional Temporary Workspace	
AR-18/ARW-18	0.0	0.8	1.8	3.0	0.1	U.S. Forest Service (USFS)
AR-25/ARW-25	0.0	5.5	32.3	33.7	1.3	Private, USFS
AR-47/ARW-47	0.0	0.0	0.4	0.5	0.0	Private
AR-48/ARW-48	0.0	7.1	41.1	40.7	1.2	USFS, North Dakota Trust Lands (NDTL), Private
AR-50/ARW-50	0.0	0.0	0.4	0.4	0.0	Private
AR-51/ARW-51	0.0	0.7	4.2	4.1	0.4	Private
AR-54/ARW-54	0.0	0.0	0.2	0.2	0.0	Private
AR-55/ARW-55	0.0	0.2	1.1	1.0	0.1	Private
Pipeline Total			81.5	83.6	3.1	

Description of the Sequence of Major Activities

Prior to construction, EBCS will survey and stake the centerline at about 200-foot intervals and at points of inflection. EBCS will also mark the edges of the temporary construction right-of-way and temporary extra workspaces, sensitive environmental feature boundaries or setback limits, and all known underground facilities. Markers will be maintained as needed during the construction period.

The temporary right-of-way will be cleared in accordance with land management agency regulations or private landowner specifications, while preserving natural drainage to the extent possible. Aboveground vegetation and obstacles within the staked pipeline right-of-way limits will be cleared, with surface disturbance limited to that required to ensure a safe working area. Vegetation buffers of appropriate width will be left between temporary extra workspace and waterbodies and wetlands.

EBCS will perform topsoil segregation in the construction right-of-way in areas that require trenching, and in other areas at the request of resource agencies or landowners. Subsoil will be stockpiled separately from topsoil. Any conserved topsoil and excavated soils will be stockpiled along one side of the right-of-way (the spoil side), allowing the other side (the working side) to be used for access, material transport, and pipe assembly. In limited instances, topsoil may be stockpiled along the edge of both sides of the construction right-of-way.

All materials not suitable for placement in areas prone to erosion (e.g., shrubs, etc.) will be temporarily stockpiled on the edge of the right-of-way during construction and will be disposed of by scattering the material over the disturbed right-of-way after seeding is completed.

After the pipeline right-of-way has been cleared and graded to the extent necessary, two trenches will be dug for the new pipelines. Blasting is not anticipated to be necessary to excavate the trench. If blasting becomes necessary, EBCS will adhere to its *Blasting Plan* (Appendix O). The trenches will be centered on flagged surveyed lines and dug to a depth of approximately 7 feet. The trench for the oil pipeline will be excavated first, and the pipeline will be placed in the trench. After the trench has been dug, sections of pipe will be strung next to the trench. The sections will be shaped to fit the contour of the trench, aligned, and welded together. All joints will be inspected and, if necessary, repaired. The pipeline assembly will then be lowered into the trench. Once the oil pipeline is installed, the trench will be backfilled, and the second trench will be excavated for installation of the produced water line. Once the produced water line is installed, the second trench will be backfilled, and the right-of-way will be graded and restored, as nearly as practical, to the original surface contours. Topsoil will then be restored, and final stabilization and restoration measures will be implemented. After construction activity is complete, and prior to placing the pipeline in service, the pipeline will be hydrostatically pressure tested to ensure structural integrity.

The Bear Den Phase 2 Project will require construction of numerous minor aboveground facilities (pig launcher/receivers, block valve sites, etc.) (see table 2-1). The construction of the aboveground pipeline facilities will generally occur at the same time as the construction of the pipeline facilities; therefore, activities such as clearing, grading, trenching, testing, and cleanup and restoration will effectively occur as part of a single construction effort.

Construction of the Project will commence in June 2014, subject to the receipt of necessary permits and approvals, in order to meet an in-service date of October 2014. Construction will occur in a planned and orderly sequence of operations along the right-of-way. EBCS would notify the BLM's Authorized Officer and all other surface owners 24 hours prior to commencing construction.

Estimates of Total Area of the Site

The typical construction right-of-way for the pipeline route will be 50 to 100 feet wide. The typical right-of-way is required to provide adequate space for segregating topsoil and assuring the safe handling of materials and operation of equipment. EBCS anticipates stripping topsoil over the full right-of-way width through most of the project, which will require significant space for segregation of soils. Conserved topsoil and excavated soils will be stockpiled along one side of the right-of-way (the spoil side), allowing the other side (the working side) to be used for access, material transport, and pipe assembly. In limited instances, topsoil may be stockpiled along the edges of both sides of the construction right-of-way.

Temporary extra workspaces along, but outside of, the 50-100-foot-wide construction right-of-way may be needed to facilitate construction at public road crossings; at wetland and waterbody crossings; in areas with steep side slopes; at hydrostatic test water withdrawal pump locations; at crossovers and tie-ins; for staging and fabrication of drag sections; equipment turnarounds; and equipment parking areas. EBCS considers the proposed 50-100 feet of construction right-of-way width and proposed additional temporary workspace locations to be necessary to construct the project in an efficient and safe manner.

Estimate of the Runoff Coefficient after Construction Activities are Completed

With the exception of waterbody and road crossings, the temporary construction right-of-way area for the pipeline will impact rangelands, which consist of herbaceous shrub land and barren lands. Affected rangelands will be restored to as near preconstruction condition as possible following construction. Therefore, the runoff coefficients for the pipeline corridor are not expected to change after construction.

Impacts to runoff associated with aboveground facilities (pig launcher/receivers, block valves, etc.) will be relatively small.

Receiving Waters

The surface water crossed by the pipeline will be shown on the pipeline construction alignment sheets and include the approximate limits of construction disturbance. The proposed pipeline will cross a total of 1 perennial waterbody, Cherry Creek and a pond that occurs within a portion of the right-of-way along Line AR-48. EBCS proposes to use the horizontal directional drill (bores) crossing method for Cherry Creek and will use the open-cut method to cross the small pond. Erosion and sediment control measures will be implemented to prevent sediment from leaving the construction site and entering the waterbodies from adjacent uplands. A summary of the milepost location, waterbody name, flow regime, and approximate crossing widths of the waterbody crossing is provided in Table 2-2.

A total of five palustrine emergent wetlands were identified in proximity to the proposed pipeline or aboveground facility sites. Four of the wetlands occur adjacent to access road PAR 25-01; however, there will be no project impacts to these wetlands. The wetland within the right-of-way will be crossed using horizontal directional drill methods. Erosion and sediment control measures will be implemented to prevent sediments from leaving the construction site and entering the wetlands from adjacent uplands. Typical wetland crossing diagram is provided as Figure 9 of Appendix C in the Plan of Development (POD).

TABLE 2-2					
Bear Ben Phase 2 Project					
Waterbody and Wetland Crossing Table					
Waterbody or Wetland Type	Waterbody ID	Line	Waterbody Name	Milepost	Crossing Method
Perennial	s-mc-kl-002	AR-25	Cherry Creek	4.4	HDD
Open Water	o-mc-kf-001	AR-48	Pond	0.4	Open-cut
wetland	w-mc-kf-001	AR-51	Wetland	0.6	HDD

3.0 CONTROLS

Erosion and Sediment Controls

Construction activities associated with the Bear Den Phase 2 Project were designed to minimize surface disturbance. Previously disturbed areas, such as roads and existing utility corridors, will be used for access and working areas wherever possible. In addition, there are two pipe storage/contractor yards that will be utilized as a staging and storage area for construction of all the facilities.

Sediment controls such as silt barriers and silt fences will be used to retain sediment on site to the maximum extent practicable. Typical erosion control drawings, including soil erosion control structures (hay bales and silt fences), erosion control blanket installations on uplands and waterbody banks, and permanent water bar installation are provided in the POD Appendix C. The controls will be properly selected, installed, and maintained in accordance with the manufacturer's specifications, good engineering practices, and EBCS's *Construction Revegetation and Monitoring Plan* (CRMP) (POD Appendix E). In general, sediment controls will be installed immediately following initial ground disturbances and will be refurbished when accumulated sediment reaches approximately 50 percent of the control structures capacity. Controls will be maintained until final stabilization controls have been installed. Temporary perimeter controls will be removed after reclamation efforts have been completed. The project contractor shall install and remove control structures as directed by EBCS. If sediment escapes the construction site, off-site accumulations of sediment will be removed by the contractor as soon as possible in order to minimize off-site impacts.

Litter, construction debris, and construction chemicals exposed to storm water shall be picked up prior to anticipated storm events or otherwise prevented from becoming a pollutant source for storm water discharges.

After construction of the pipeline is completed, the work areas will be graded and restored, as near as practicable, to the original contour of the land using the original soil. Where segregated, the original topsoil will be evenly spread over the disturbed area. Soil stabilization efforts will include revegetation, mulching, application of erosion control blankets, and permanent water bar or pocking installation.

After erosion control structures are installed, the disturbed areas will be prepared for revegetation. The areas to be seeded will be scarified as necessary to eliminate compaction of the seed bed and to aid in permeability. Seeding will be accomplished by drilling, hydroseeding, or broadcasting the mixes identified in the CRMP. In areas where drilling is not possible, seed may be broadcast and raked or chained to cover the seed. The seed mixture rate will be increased if the broadcasting technique is utilized. The seed mixes may be changed depending on availability of individual species.

Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. If earth-disturbing activities would be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of the site. Where the initiation of stabilization measures cannot be performed within 14 days because of snow cover or frozen ground, stabilization measures shall be initiated as soon as practicable.

Storm Water Management Controls

Silt barriers (such as drivable berms) and/or silt fences will be installed along perennial and intermittent streams as necessary in order to dissipate the velocity of any storm water discharge from the construction site. Vegetation present along both sides of the relatively narrow construction right-of-way will also help dissipate storm water flows from the right-of-way. Because the right-of-way will be graded to match the original contour using the original topsoil and then re-vegetated with a seed mix designed to restore the original vegetation, storm water flows are expected to return to pre-construction levels. Therefore, post-construction storm water management measures will be installed only as needed.

Construction Site Dewatering

A separate permit will be obtained for the discharge of water from hydrostatic test discharges and groundwater.

If trench or construction site dewatering due solely to storm water is required, EBCS will install energy dissipating devices such as sand bags, silt bags, riprap, etc. at the discharge outlet to slow flow and minimize erosion. These devices will be removed upon completion of the discharge event.

Construction Mitigation and Revegetation Plan

The Bear Den Phase 2 Project will be constructed in accordance with EBCS' project-specific CRMP, which is provided as Appendix E of the POD.

Other Controls

All wastes created during construction such as construction materials, welding and cutting materials, pipe and fittings, concrete asphalt, drilling mud, and slash will be removed from the construction area and disposed of in an approved disposal site. No trash or other pollutants will be buried within the construction right-of-way and organic refuse not suitable for spreading over the right-of-way will be disposed of at an authorized facility. No solid materials, including building materials, shall be discharged to waters of the state. All applicable state and/or local waste disposal regulations will be complied with.

Water will be primarily used along access roads and the construction right-of-way to control fugitive dust emissions. All visibly dry disturbed access roads and disturbed soil surface areas shall be watered as necessary to control dust emissions. The frequency of water application will largely depend on weather conditions. The Environmental Inspector will direct application of additional dust controls as necessary. If precipitation occurs during the course of construction, vehicular traffic along the right-of-way will be minimized to reduce the potential for erosion.

Gasoline, diesel fuels, lubricants, and other potential pollutants will be stored in containers that will prevent their accidental release. Additional steps to prevent the accidental discharge of potential pollutants are described further in the project-specific *Spill Prevention, Control, and Countermeasure Plan* (POD Appendix L).

Other Laws and Requirements

All other laws effecting erosion and sediment control, where applicable, will be complied with, including federal and state laws pertaining to threatened or endangered species or historic properties.

4.0 MAINTENANCE

Final grading and seeding of the disturbed areas will begin as soon as possible after construction activities are completed. Where final restoration is delayed, temporary erosion control measures will be implemented. Any needed maintenance identified by inspections or other means, shall be accomplished as soon as practicable or as necessary to maintain the continued effectiveness and permit compliance of the storm water controls.

5.0 INSPECTIONS AND RECORD KEEPING

Qualified personnel (i.e., Environmental Inspectors provided by EBCS) shall inspect disturbed areas of active construction that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site at least once every 14 days. Inspections shall also be performed within 24 hours of any precipitation event which exceeds 0.5 inches. Areas of completed construction that do not meet the criteria for final stabilization may be inspected once per month.

Inspections may be suspended if an area of completed construction has reached final stabilization as defined by Section II E. of the General Permit. Inspections may also be suspended if earthwork has been suspended due to frozen ground conditions, but must resume as soon as runoff occurs or the ground begins to thaw at that site.

An inspection report will be completed by the Environmental Inspector at the time of each inspection and made available to the Administrator upon request. If the report describes deficiencies in pollution control structures or procedures, such deficiencies will be corrected as soon as possible. Copies of the reports will be retained at the construction site. After construction is completed, copies of the reports will be retained by EBCS for a minimum of 3 years.

6.0 NON-STORMWATER DISCHARGES

Sources of non-storm water discharges may include use of water for dust control and discharges associated with construction site dewatering. Pollution prevention measures for dust control water will consist of using uncontaminated water and not spraying any water into surface waters or drainageways. The pollution prevention measures for construction site dewatering discharges will include directing discharges of sand, silt, and/or sediment to upland locations to avoid damage to property, including wetlands and waterbodies, and use of dewatering structures to dissipate the discharge energy, retain sediments, and facilitate infiltration.

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BEAR DEN PHASE 2 PROJECT

**ATTACHMENT 1
NPDES Storm Water Construction General Permit**



BEAR DEN PHASE 2 PROJECT

ATTACHMENT 2
Contractor Certification for Implementation of the
Storm Water Pollution Prevention Plan

BEAR DEN PHASE 2 PROJECT
STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I have read, fully understand, and shall comply with all requirements and standards set by this document, all attachments, and all additional information submitted by me. I am aware that failure to comply with these requirements and standards may result in a violation of the State and Federal Clean Water Acts including the possibility of fine and imprisonment.

I also certify under penalty of law that the additional information submitted for this document and all attachments was 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 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.

Signature

Date

Print Name

Title and Company