

GP #26 Well Pad Form 2A Kinder Morgan CO2 Company, LP

INTRODUCTION

This Form 2A stormwater report includes the Best Management Practices (BMPs) and reclamation plans for Kinder Morgan's proposed GP #26 well pad in accordance with Colorado Oil and Gas Conservation Commission's (COGCC) Form 2A requirements. BMP diagrams and additional general stormwater information is included with Kinder Morgan's Master Stormwater Management Plan (MSWMP) for oil and gas construction activities for McElmo Dome and Doe Canyon. The MSWMP can be obtained from Kinder Morgan and is in accordance with Colorado Department of Public Health and Environment (CDPHE) stormwater guidelines. The Kinder Morgan contact person is Bob Clayton and his contact information is below:

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PROJECT DESCRIPTION

The proposed well pad would be located on agricultural land currently planted to alfalfa. The eastern portion slopes gently (5 percent slope) to the southeast. Slopes are steeper (6-8 percent) where they fall off into the drainage running along the western side of the project area. This region drains to the west and southwest. A small inclusion (~ 0.5 acres) of smooth brome (*Bromus inermis*) grassland is present in the northwest corner. The proposed access road leaves the main county road and travels through the alfalfa field for 70 feet before terminating at the eastern pad boundary. The primary disturbance would be the removal of top soil to create a level pad (360 feet by 350 feet) for drilling.

ESTIMATED TOTAL AREA OF THE SITE TO UNDERGO CLEARING, EXCAVATION, OR GRADING

The maximum disturbance associated with the proposed well pad would be 6.17 acres.

EXISTING SOIL DATA

Parent materials found at the project site and surrounding areas are Eolian deposits derived from sandstone. The surveyed soil map units found within the proposed project area consist of Unit 144 (Wetherill loam, 3 to 6 percent slopes) and Unit 19 (Cahona loam, 6-12 percent slopes) (NRCS 2011¹). The majority of the project area falls within unit 144. The dominant Wetherill soils are associated with hills and mesas, are well drained, can contain up to 30 percent calcium carbonate (CaCO₃), and have a high available water capacity. The profile consists of loam down to 7 inches, clay loam to 48 inches, followed by loam down to 60 inches. Runoff is high and water erosion is severe. The soils in map Unit 19

are associated with a small drainage that cuts through the western quarter of the disturbed area. Cahona and similar soils comprise 85 percent of the unit and are well drained, can contain up to 50 percent CaCO_3 , and have a high available water capacity. A typical profile has loam down to 5 inches, followed by clay loam down to 25 inches, and then loam again down to 60 inches. Runoff is high and water erosion is severe.

¹ Natural Resources Conservation Service (NRCS). 2011. Web Soil Survey. Available online at: <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed April 3, 2013.

² Natural Resources Conservation Service (NRCS). 1993. National Engineering Handbook, title 210-VI. Part 630, Chapter 7. Washington, DC. Available online at: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1043081.pdf. Accessed April 3, 2013

DESCRIPTION OF EXISTING VEGETATION AND ESTIMATE OF PERCENT OF GROUND COVER

The majority of the project area is located in an agricultural field planted to alfalfa. At the time of the field visit (April 4, 2013) vegetation (alfalfa) covered only 1 percent of the area and litter made up about five percent. The smooth brome grassland had a 55 percent vegetative cover and a 35 percent litter cover. Species in the grassland include smooth brome and tansyaster (*Machaeranthera* sp.).

NAME OF RECEIVING WATER AND TYPE OF OUTFALLS

The nearest perennial water—indicated on the U.S. Geological Survey (USGS) topographic map—is the Dolores River, located 12.5 miles Northeast of the project area. However, drainage from the proposed project flows southwest through several named and unnamed ephemeral and intermittent drainages to the San Juan River which is 26 miles to the southwest. There are no perennial water sources, wetlands, seeps, springs, or riparian areas within the proposed well pad or surrounding area.

PROJECT-SPECIFIC BMPs

The following tables list site-specific BMPs identified by Ecosphere during the field visit conducted on April 4, 2013. Site-specific BMPs should be installed pre-construction and during the construction process. BMP diagrams are included in the MSWMP. BMPs would be maintained or amended by Kinder Morgan as site conditions change throughout the construction and reclamation process. Stormwater inspections would occur as stipulated in the MSWMP and required by the Colorado Department of Public Health and Environment (CDPHE). A map showing the BMP locations is attached. Site-specific BMPs be maintained until vegetation reaches 70 percent of the pre-construction cover as mandated by the COGCC and CDPHE.

BMP	How It Works	Location
Fiber Wattles (Sediment Control Logs)	Fiber wattles on the downhill side of a disturbed area filter stormwater	Encompassing entire periphery of disturbed area as well as around stock piled soils.
Bonded Fiber Matrix	Provides durability to minimize water and wind erosion while allowing for optimal rainwater penetration. Bonding agents hold soil in place to prevent soil runoff and/or dust water-holding ingredients increase performance.	Disturbed areas surrounding well pad.

PROJECT SPECIFIC NON-STRUCTURAL BMPs

Non-structural BMPs are discussed in the Kinder Morgan MSWMP, Table 2 describes non-structural BMPs used at DC #14.

Table 2. Non-Structural BMPs.

BMP	How It Works	Location
Soil Roughening	Surface roughening creates small ridges and gullies with the teeth of the bucket of the front end loader, or with the grooves of tracked equipment. These ridges and gullies go across the slope (or along the contour of the slope), trapping stormwater and helping with revegetation. To create these ridges/gullies with tracked equipment, the equipment should be run up/down the slope (or perpendicular to the contour of the slope).	All disturbed areas.
Equipment Storage	All equipment will be contained within the ROW disturbance.	Within disturbance area.
Rapid Reclamation	Rapid reclamation (surface contouring, surface roughening, seeding, and weed control) help to stabilize soil with vegetation.	Within disturbance area.

These non-structural BMPs are not shown on the BMP map, because they will be applied to the entire project area beginning with construction and continuing until final stabilization is reached.

GP #26 Preconstruction BMP MAP

