

DC #14 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 in Township 40 North, Range 18 West, Section 14 at an elevation of 7,100 feet. The pad would be located on agricultural land currently planted to winter wheat. The project area is on a south facing slope with slopes ranging from 5 to 8 percent. The proposed access road comes in from County Road 13 and terminates near the northwest corner of the pad boundary. Disturbance would include the removal of top soil to create a level pad for drilling, as well the clearing of a 50 foot wide pipeline right-of-way (2,938'-feet in length), and the construction of an access road (3,460-feet in length, 40-foot ROW).

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

The maximum disturbance associated with the proposed well pad would be 12.13 acres. Of this amount, 5.58 acres are connected with the well pad, 3.18 acres represent the access road, and 3.37 acres are associated with the pipeline ROW. Kinder Morgan typically utilizes the pipeline ROW as the access road to minimize disturbance. However, this strategy is not feasible for the proposed DC #14 location.

EXISTING SOIL DATA

Parent materials found at the project site and surrounding areas consist of Eolian deposits over residuum weathered from sandstone and Eolian deposits derived from sandstone. The surveyed soil map units found within the proposed project area are 42 - Gladel-Pulpit complex, 3 to 9 percent slopes

(northern and southern ends of the project area) and 145 - Wetherill loam, 6 to 12 percent slopes (mid-portion of the project area) (NRCS 2011¹).

In map unit 42, the Gladel soils make up 45 percent of the unit and Pulpit soils compose 35 percent. Gladel soils are associated with hills and mesas, are shallow, well drained, have moderately rapid permeability, and have a very low available water capacity. The runoff potential is medium, shrink-swell potential is low, and the hazard of water and wind erosion is rated as moderate. They are made up of flaggy fine sandy loam. Pulpit soils are moderately deep, well drained, have a moderate available water capacity, and permeability is moderately slow. The soil profile is composed of loam down to bedrock. The shrink-swell potential is low, wind and water hazards are moderate, and the runoff potential is high.

The dominant (80 percent) soil in map unit 145 is Wetherill loam. Wetherill loam is associated with hills and mesas, well drained, very deep, and has a high available water capacity. The typical profile has loam down to 7 inches, followed by clay loam to 48 inches, and loam again down to 60 inches. Wind erosion hazards and the shrink-swell potential are rated as moderate. The hazard of water erosion is severe and the runoff potential is high (NRCS 2011¹).

¹ Natural Resources Conservation Service (NRCS). 2011. Web Soil Survey. Available online at: <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed March 15, 2013.

DESCRIPTION OF EXISTING VEGETATION AND ESTIMATE OF PERCENT OF GROUND COVER

The majority of the project area is in a dry land agricultural field currently planted with a variety of winter wheat (*Triticum* sp.). A few forb species are also present including prickly Russian thistle (*Salsola tragus*) and several members of the mustard family (*Brassicaceae*). The northern edge of the disturbed area takes in an upland shrub community (approximately 3 percent of the total disturbed area). This community is comprised primarily of big sagebrush (*Artemisia tridentata*), cliff fendlerbush (*Fendlera rupicola*), longflower rabbitbrush (*Chrysothamnus depressus*), needle and thread (*Hesperostipa comata*), spring parsley (*Cymopterus planosus*), banana yucca (*Yucca baccata*), cheatgrass (*Bromus tectorum*), rock goldenrod (*Petradoria pumila*), and Indian ricegrass (*Achnatherum hymenoides*). One twoneedle pinyon (*Pinus edulis*) sapling was found as well. The field portion of the location currently has a 5 percent plant cover and 3 percent litter cover. The upland shrub habitat consists of 60 percent vegetative cover and 30 percent litter cover.

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 4.5 miles due east of the project area. However, drainage from the proposed project area generally flows southwest through several named and unnamed ephemeral and intermittent drainages to the San Juan River, located 40 miles to the southwest. There are no perennial water sources, wetlands, seeps, springs, or riparian areas within the proposed well pad location or surrounding area.

PROJECT-SPECIFIC BMPs

The following tables list site-specific BMPs identified by Ecosphere during the field visit conducted on April 2, 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.

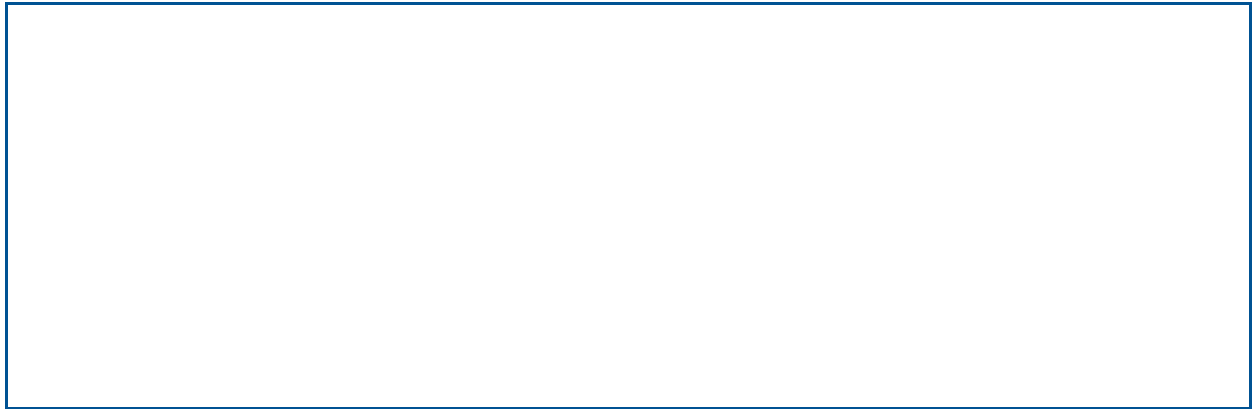
PROJECT SPECIFIC NON-STRUCTURAL BMPs

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.



DC #14 Preconstruction BMP MAP

