

Doe Canyon #12 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 Doe Canyon #12 well pad in accordance with Colorado Oil and Gas Conservation Commission's (COGCC) Form 2A requirements. Additional information on BMPs recommended for the associated pipeline and access road is included with the Doe Canyon #12 Project Specific Data Sheet (PSDS). BMP diagrams and additional general stormwater information is included with Kinder Morgan's Regional Stormwater Plan (RSWMP) for oil and gas construction activities for McElmo Dome and Doe Canyon. Both the PSDS and RSWMP can be obtained from Kinder Morgan and are 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 northern half of the proposed action would be located on agricultural land converted to Conservation Reserve Program (CRP). The southern half of the proposed action would be located on barren, plowed agricultural land. The location is fairly level to rolling with slope ranging from 2-6 degrees. The northern half of the well pad location is uniformly covered with reseeded vegetation. Disturbance would include 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 up to 2.5 acres.

EXISTING SOIL DATA AND ESTIMATED RUNOFF COEFFICIENT BEFORE AND AFTER CONSTRUCTION

Surface geology of the project area and vicinity consists of loam residium, slope alluvium, and Eolian deposits derived from sandstone and shale. Surveyed soil type for the project area consists of two types: Wetherill loam 6-12 percent slopes and Cahona-Pulpit complex, 3 to 9 percent slopes (NRCS 2011¹).

Wetherill loam 6-12 percent slopes consists of 80 percent Wetherill soils and 20 percent contrasting inclusions and is found associated with hills and mesas. Wetherill loam soils are very deep, moderately well drained and have a moderately slow permeability. The available water capacity is high and the potential rooting depth is 60 inches or more. Runoff is high and water erosion is severe. The shrink-swell potential for Wetherill loam is moderate.

Cahona-Pulpit complex, 3 to 9 percent slopes consists of 50 percent Cahona soils, 35 percent Pulpit and similar soils, and 15 percent contrasting inclusions, and is found associated with hills and mesas. Cahona soils are very deep, well drained and have a moderate permeability. The available water capacity is high and the potential rooting depth is 60 inches or more. Runoff is high and water erosion is severe. The

shrink-swell potential is moderate. Pulpit soils are moderately deep, well drained and have a moderately slow permeability. The available water capacity is low and the potential rooting depth is 20-40 inches. Runoff is high and water erosion is severe. The shrink-swell potential for Pulpit soils is low.

To estimate the runoff coefficient for the site before and after construction, Typical “C” Values (EPA 2007²) is located in Section C.2. of the State of Colorado Storm Water Management Plan Guidance Document (CDPHE 2011³). The runoff coefficient for the project area is expected to vary between 0.1 and 0.3 (unimproved areas) and is not expected to change significantly following construction.

¹ Natural Resources Conservation Service (NRCS). 2011. Web Soil Survey. Available online at: <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed December 7, 2011.

² Environmental Protection Agency (EPA). 2007. Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites. Available online at: http://www.epa.gov/npdes/pubs/sw_swppp_guide.pdf. Accessed December 7, 2011.

³ Colorado Department of Public Health and Environment (CDPHE). 2011. Available online at: http://www.cdphe.state.co.us/wq/PermitsUnit/PERMITS/CONSTRUCTION/SWCONSTINSTR_SWMPGUIDE.pdf. Accessed December 7, 2011.

DESCRIPTION OF EXISTING VEGETATION AND ESTIMATE OF PERCENT OF GROUND COVER

The southern half of the location is freshly plowed and barren. The northern half is uniformly covered with reseeded CRP vegetation. Vegetation within the proposed project includes smooth brome, crested wheat, and sunflower. During the onsite visit on November 17, 2011 vegetative cover in the project area was visually estimated at 50 percent. The proposed project area contains no riparian or aquatic habitats.

NAME OF RECEIVING WATER AND TYPE OF OUTFALLS

The nearest perennial water—indicated on the U.S. Geological Survey (USGS) topographic map—is the San Juan River, located 40-45 miles southwest of the project area. Drainage from the proposed project would generally flow southwest through several named and unnamed ephemeral and intermittent drainages to the San Juan River. 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 listed BMPs are site-specific BMPs identified by Ecosphere during the field visit conducted November 17, 2011. Site-specific BMPs should be installed pre-construction and during the construction process. BMP diagrams are included in the PSWMP. 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 RSWMP and required by the Colorado Department of Public Health and Environment (CDPHE). A map showing the BMP locations is attached. Site-specific BMPs will be installed pre-construction and during the construction process and will continue to be maintained until vegetation reaches 70% of the pre-construction cover as mandated by the COGCC and CDPHE.

BMP 1: Fiber wattles will encompass the entire eastern periphery of the well pad.

BMP #2: Disturbed portions of the well pad not necessary for operation and maintenance of the well would be re-contoured and roughened to blend into the surrounding terrain. In addition, a landowner-approved seed mix would be applied at the appropriate time using seeding and mulching methods outlined in the RSWMP.



Photograph 1. Looking at the eastern periphery of the well pad location.

BMP 3: Fiber wattles will be placed down slope from the access road where it crosses a north south running swale (NAD 83 Zone 12N 37.7513, -108.8392).



Photograph 2. Looking south at the swale crossing the access route.

BMP 4: Fiber wattles will be placed down slope from the access road where it crosses a north south running swale (NAD 83 Zone 12N 37.7510, -108.8430).

PROJECT BMP MAP

