

**CB-5 Well Pad  
Site Specific Data Sheet  
Kinder Morgan CO<sub>2</sub> Company, LP  
May 2017**

**INTRODUCTION**

This Site Specific Data Sheet (SSDS) for the CB-5 well pad includes information required by Kinder Morgan CO<sub>2</sub> Company's (KM) master general construction storm water permit administered by Colorado Department of Public Health and Environment (CDPHE). General storm water permit information and Control Measure Installation Diagrams are included in KM's Master Storm Water Management Plan (MSWMP) for oil and gas construction activities for McElmo Dome and Doe Canyon. The MSWMP is maintained at the KM Cortez field office. The documents can be obtained from the KM SWMP Administrator listed below:

Barry Swift  
Asset Manager  
Kinder Morgan CO<sub>2</sub> Company L.P.  
17801 Highway 491 Cortez, CO 81321

**PROJECT DESCRIPTION**

The planned CB-5 well pad will be located in Township 38N and Range 19W, Section 14, NMPM, Montezuma County, Colorado. Site construction is planned to commence in fall 2017. The access road to the well pad will be south off of County Road BB and adjacent to the existing CB-1 well pad. The attached Control Measure Map illustrates the planned location of the project area.

**SURFACE DISTURBANCE SUMMARY**

The maximum disturbance associated with the well pad is 6.08 acres and the access road is approximately 1,830 feet long within a 60-foot utility corridor for a total of 2.52 acres of disturbance.

**EXISTING SOIL AND EROSION POTENTIAL**

Parent materials found at the project site and surrounding areas include alluvium and eolian deposits. The surveyed soil map units for the project area consist mainly of Wetherill loam, 3 to 6 percent slopes. This soil type is moderately erodible by wind and moderate to highly erodible by water and is well drained.

## **VEGETATION AND PERCENT OF GROUND COVER**

A site visit was conducted by Souder, Miller and Associates on May 1, 2017. Vegetation observations are as follows:

*Approximately one half (1/2) of the well pad footprint is tilled farmland. The eastern boundary and the southern boundary of the pad are situated within a mature Piñon (Pinus edulis) and Juniper (Juniperus osteosperma) Woodland community. The trees averaged in height between 10-20 feet and occupy approximately 35-45 percent of the ground cover. Dominant shrubs observed included: Gambel oak (Quercus gambelii), big sagebrush (Artemisia tridentata), antelope bitterbrush (Purshia tridentata), and four-wing saltbush (Atriplex canescens). Shrubs comprised approximately 15-25 percent ground cover. Grasses and forbs occupied approximately 10-15 percent ground cover. Dominant forbs and grasses observed included: lupine (Lupinus prunophilus), woody phlox (Phlox hoodii), penstemon (Penstemon strictus), Junegrass (Koeleria macrantha), needle and thread (Stipa comata), and squirreltail bottlebrush (Elymus elymoides). Cheatgrass (Bromus tectorum) was present and widespread, however it was more established along the boundaries of the disturbed ground intermixed with the sagebrush. No other State of Colorado listed species were observed throughout the project area. Bare ground accounted for approximately 15-20 percent ground cover and often consisted of woody litter and pine needle duff or cryptobiotic crust.*

## **NAME OF RECEIVING WATER AND TYPE OF OUTFALLS**

It is anticipated that most storm water runoff from the project area will infiltrate into the earth and is not expected to contribute to receiving water. The nearest receiving water is an unnamed intermittent stream approximately 475 feet southeast of the project area. The intermittent stream drains to Ruin Canyon, which is approximately 0.55 miles south of the project area. Preventative control measures will be utilized to prevent any discharge of contaminated storm water outside of the project area boundaries.

## **ALLOWABLE NON-STORMWATER DISCHARGES**

Non-storm water discharges are not anticipated within the project area. Allowed non-storm water discharges are discussed in detail in the MSWMP. If any of these have a potential to occur within the project area, the SSDS and control measures will be updated accordingly.

## **POTENTIAL POLLUTANT SOURCES**

The potential sources of pollution expected for this project would come primarily from disturbed soil and vehicle tracking. Large rain events or sudden snow melting would be the primary reasons for sediment transport. This could occur across the project area at any time. Areas around drainages and low lying areas are most vulnerable and are the primary areas for control measure installation.

The following items are additional potential sources of pollutants within the project area. Each of the potential sources of pollutants will be controlled using one or more of the following types of control measures: Erosion Controls, Drainage Controls, Sediment Controls or Non-Structural Controls. Actual control measures used at the site are shown on the site specific Control Measure Map.

- Significant Dust or Particulate Generating Processes
- Routine Maintenance Activities Involving Pesticides, Detergents, Fuels, Solvents, Oils, etc.
- Drilling fluids, including produced water

## PROJECT SPECIFIC CONTROL MEASURES

The following listed control measures are site-specific control measures used in the project area. Control measure installation diagrams are included in the MSWMP. Control measures are maintained or amended by Kinder Morgan as site conditions change throughout the life of the project. Storm water inspections occur as stipulated in the MSWMP and as required by the CDPHE. A map showing the locations of control measures is attached. The control measure map is amended as control measures are added/removed at the site. Table 1 describes structural control measures used within the project area. Table 2 includes non-structural control measures that are utilized for the project area also, beginning with construction and continuing until final stabilization is reached.

**Table 1. Non-Structural Control Measures**

Control Measure	How It Works	Location
Culvert Protection	Inlet and outlet protection prevent soil and debris from entering storm drain inlets and preventing scouring at outlets by reducing flow.	At culvert along access road, where installed.
Erosion Control Logs	Erosion control logs are made of fibrous material and work by trapping sediment. Erosion control logs must be trenched into the ground to be effective.	Along low points and perimeter control where needed, to prevent run-on and discharge of sediment off site.
Sediment Traps/Swales	Sediment traps can be a variety of sizes and shapes, depending on the intended use. Sediment traps pool storm water, allowing sediment to settle out and have an armored outlet.	Along slopes with high water flow/velocity.
Mulch Tackifier	Hydraulic mulch is a mixture of shredded wood fiber or hydraulic matrix, water, and a stabilizing emulsion or tackifier. Applied hydraulic mulch will help protect bare soil from water and wind erosion	On steep slopes with high erosion potential.










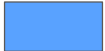

**Table 2. Non-Structural Control Measures**

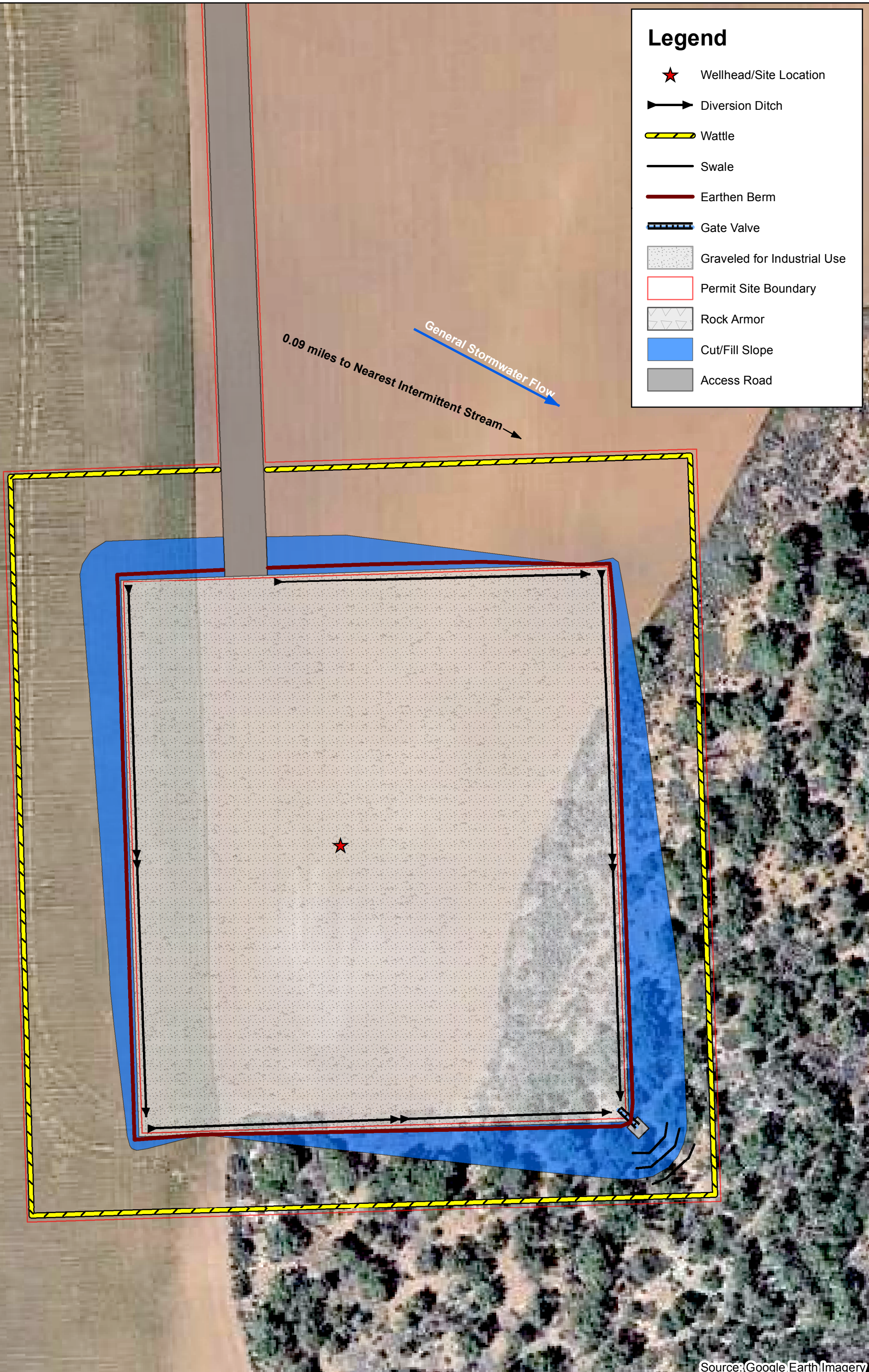
Control Measure	How It Works	Location
Soil Roughening	Surface roughening creates small ridges with the teeth of the bucket on the front-end loader or with the grooves of tracked equipment. These ridges and gullies go across the slope (or along the contour of the slope), trapping storm water and helping with re-vegetation. To create these ridges/gullies with tracked equipment, the equipment should be run up/down the slope.	All disturbed areas where needed.
Dust Mitigation	Whenever needed, a water truck will be used to add moisture to the soil that will prevent the soil from becoming airborne and leaving the site.	Within disturbance area where needed.
Preventative Maintenance	Preventative maintenance ensures control measures are functioning properly.	Within disturbance area where needed.
Revegetation	Revegetation includes grading, soil preparation, seeding, and occasionally mulching. Revegetation stabilizes slopes and creates a vegetative buffer strip.	On top soil pile during drilling operations and access road borrow ditch.

## **FINAL STABILIZATION/RECLAMATION**

The well pad working area and access road will be stabilized with gravel and the remaining area of disturbance will be re-contoured and seeded with a dryland pasture grass mix or returned to agricultural use. All reclaimed areas will be covered with certified weed-free straw and crimped into the surface to aid in moisture retention.

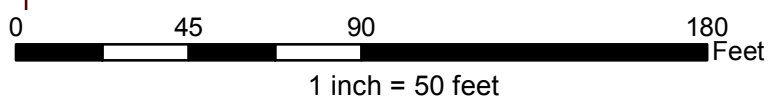
### Legend

-  Wellhead/Site Location
-  Diversion Ditch
-  Wattle
-  Swale
-  Earthen Berm
-  Gate Valve
-  Graveled for Industrial Use
-  Permit Site Boundary
-  Rock Armor
-  Cut/Fill Slope
-  Access Road



Source: Google Earth Imagery

**Rule** Engineering, LLC  
Solutions to Regulations for Industry



S14/15-T38N-R19W  
N37.54489, W108.94043  
Montezuma County, CO

**Control Measure Site Map**  
CB-5