

IGS 146 Site Specific Data Sheet Elm Ridge Exploration Company, LLC July 2014

INTRODUCTION

This Site Specific Data Sheet (SSDS) includes the best management practices (BMPs) and reclamation plans for Elm Ridge Exploration Company (Elm Ridge) IGS 146 well in accordance with the Colorado Department of Public Health and Environment (CDPHE) requirements. This SSDS is a supplemental attachment to the Elm Ridge Master Stormwater Management Plan (MSWMP) for oil and gas construction activities in the Ignacio-Blanco oil and gas field. BMP diagrams and additional general stormwater information are also included in the MSWMP.

The SSDS and MSWMP can be obtained from Elm Ridge. Terry Lindeman is the Elm Ridge contact person and his contact information is listed below:

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PROJECT DESCRIPTION

The proposed work area would be located on and off the existing Elm Ridge Crigler Ute #1 well pad. The total area of the proposed well pad construction is 0.94 acre, none of which would be new disturbance. Slopes within the proposed project average 0 to 3 percent. The existing well pad disturbance is 1.30 acres. Disturbance would include the removal of soil to create a level pad of 170 feet by 250 feet for drilling. The wellhead and additional aboveground surface equipment and infrastructure will be the only items remaining on the pad once the well goes to completion.

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

The maximum disturbance associated with the proposed permanent well pad would be 0.94 acre, none of which would be new disturbance.

EXISTING SOIL

Parent materials found at the project site and surrounding areas include residuum weathered from shale and fine-textured alluvium derived from shale. The surveyed soil-map units for the project area consist of Zyme-Rock outcrop complex, 12 to 65 percent slopes and Arboles clay, 3 to 12 percent slopes. Arboles clay soils are partially hydric; both soil types are well drained and have a moderate potential for water and wind erosion (NRCS 2014¹).

¹ Natural Resources Conservation Service (NRCS). 2014. Web Soil Survey. Available online at <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed July 2014.

DESCRIPTION OF EXISTING VEGETATION AND ESTIMATE OF PERCENT OF GROUND COVER

The proposed well pad would be within an existing well pad disturbance area. The majority of the project area is bare ground with no ground cover. Previously disturbed, reclaimed vegetation accounts for a small portion of the project area. Ground cover was visually estimated at approximately 20 percent in reclaimed areas during the July 2014 site visit.

NAME OF RECEIVING WATER AND TYPE OF OUTFALLS

The nearest perennial water (indicated on the U.S. Geological Survey topographic map) is Salt Creek, located approximately 3.6 miles northwest of the project area. Drainage from the proposed project area generally flows north then northwest, through unnamed intermittent drainages to Salt Creek, and then connects to the Florida River located approximately 2 miles west. 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 BMPs are site-specific BMPs identified by Ecosphere Environmental Services during a field visit conducted in July 2014. BMP diagrams are included in the MSWMP. BMPs would be maintained or amended by Elm Ridge as site conditions change throughout the construction and reclamation process. Stormwater inspections would occur as stipulated in the MSWMP and required by the CDPHE. A map showing the BMP locations is attached. Site-specific BMPs will be installed pre-construction and during the construction process; BMPs will continue to be maintained until the site is finally stabilized per CDPHE requirements. Table 1 describes the structural BMPs used at IGS 146.

Table 1. Structural BMPs

BMP	How It Works	Location
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.	Around perimeter of the well pad.
Diversion Ditch	The diversion ditch diverts surface run on, around the well pad.	A diversion ditch will be located around the perimeter of the well pad area to divert water from the well pad.
Fuel and Chemical Containment	Fuel and chemicals stored on-site will be within secondary containments to reduce the potential for spills or off-site releases.	Where needed.
Tracking Control	An effective vehicle tracking control helps remove sediment (mud or dirt) from vehicle tires, reducing the potential for tracking onto off-site paved roadways.	If and where needed.
Earth Berm	A compacted and stabilized earth berm greatly helps prevent any off-site releases.	On north and east sides of the well pad.

BMP	How It Works	Location
Riprap	Riprap is protection that consists of a layer of angular rocks. The rocks slow stormwater flow, thereby reducing erosion and settling out sediment.	Installed at inlets and/or outlets of diversion ditches, drainpipes, and culverts.
Silt Trap	Silt traps located at the end of diversion ditches collect sediment.	Installed at the end of diversion ditches.
Tackifier	Used to stabilize bare soil from wind and water erosion. The tackifier is combined with seed to encourage germination as well.	On cut slopes and fill slopes of the disturbance area on the well pad.

NON-STRUCTURAL BMPs

Table 2 includes non-structural BMPs that will be applied to the entire project area where needed, beginning with construction and continuing until final stabilization is reached.

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 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 stormwater and helping with revegetation. To create these ridges/gullies with tracked equipment, the equipment should be run up/down the slope.	All disturbed areas where needed.
Equipment Storage	All equipment will be contained within the ROW disturbance.	Within disturbance area where needed.
Rapid Reclamation	Rapid reclamation (surface contouring, surface roughening, seeding, and weed control) help to stabilize soil with vegetation and reduce runoff.	Within disturbance area 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.

PROJECT BMP MAP

