

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018

**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*

5. Lease Serial No.  
COC9415

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

7. If Unit or CA/Agreement, Name and/or No.  
8910180310

1. Type of Well

Oil Well  Gas Well  Other

8. Well Name and No.  
DOE CANYON 3

2. Name of Operator

KINDER MORGAN CO2 CO, LP

Contact: JENNA EMERICK

E-Mail: jenna\_emerick@kindermorgan.com

9. API Well No.

05-033-06133-00-S1

3a. Address

17801 HWY 491  
CORTEZ, CO 81321

3b. Phone No. (include area code)

Ph: 970-882-5537

10. Field and Pool or Exploratory Area  
DOE CANYON

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 6 T40N R17W Lot 21 2752FSL 2267FWL  
37.756500 N Lat, 108.770770 W Lon

11. County or Parish, State

DOLORES COUNTY, CO

**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input checked="" type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

See attached Final Reclamation Plan.

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #529443 verified by the BLM Well Information System  
For KINDER MORGAN CO2 CO, LP, sent to the Durango  
Committed to AFMSS for processing by ASHLEY HITCHHELL on 09/10/2020 (20ACH0094SE)**

Name (Printed/Typed) JENNA EMERICK

Title EHS SPECIALIST

Signature (Electronic Submission)

Date 09/10/2020

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By CHRIS KRASSIN

Title ASSISTANT FIELD MANAGER

Date 09/15/2020

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Durango

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***

## Revisions to Operator-Submitted EC Data for Sundry Notice #529443

	<b>Operator Submitted</b>	<b>BLM Revised (AFMSS)</b>
Sundry Type:	RECL NOI	RECL NOI
Lease:	COC9415	COC9415
Agreement:		8910180310 (COC47612A)
Operator:	KINDER MORGAN CO2 COMPANY, LP 17801 U.S. HIGHWAY 491 CORTEZ, CO 81321 Ph: 970-882-5537	KINDER MORGAN CO2 CO, LP 17801 HWY 491 CORTEZ, CO 81321 Ph: 970.882.5517
Admin Contact:	JENNA EMERICK EHS SPECIALIST E-Mail: jenna_emerick@kindermorgan.com  Ph: 970-882-5537	JENNA EMERICK EHS SPECIALIST E-Mail: jenna_emerick@kindermorgan.com  Ph: 970-882-5537
Tech Contact:	JENNA EMERICK EHS SPECIALIST E-Mail: jenna_emerick@kindermorgan.com  Ph: 970-882-5537	JENNA EMERICK EHS SPECIALIST E-Mail: jenna_emerick@kindermorgan.com  Ph: 970-882-5537
Location:		
State:	CO	CO
County:	DOLORES COUNTY	DOLORES
Field/Pool:	DOE CANYON	DOE CANYON
Well/Facility:	DOE CANYON 3 Sec 6 T40N R17W Mer NMP SENW 2750FSL 2260FWL	DOE CANYON 3 Sec 6 T40N R17W Lot 21 2752FSL 2267FWL 37.756500 N Lat, 108.770770 W Lon

# Kinder Morgan CO<sub>2</sub> Company, L.P.

---

## Final Reclamation Plan

*Doe Canyon 3*  
*(05-033-06133)*

September 2020

---

Prepared for



Kinder Morgan CO<sub>2</sub> Company, L.P.  
17801 Highway 491  
Cortez, Colorado 81321  
Phone: (970) 882-2464

Developed by



*Energy Inspection Services*

Energy Inspection Services  
479 Wolverine Drive #9  
Bayfield, Colorado 81122  
Phone: (970) 884-4080

## Table of Contents

---

<b>1.0 Introduction .....</b>	<b>2</b>
<b>2.0 Pre-Reclamation Site Inspection.....</b>	<b>2</b>
2.1 Vegetation Community.....	3
2.2 Proposed Reclamation Seed Mix.....	3
2.3 Vegetation Reclamation Standards.....	3
2.4 Proposed Reclamation and Stormwater Maps .....	4
<b>3.0 Reclamation Techniques.....</b>	<b>8</b>
3.1 Equipment and Facilities Removal .....	8
3.2 BLM Fencing Specifications .....	14
3.3 DC-3 Flowline Abandonment.....	16
3.4 Parking Area Design.....	17
3.5 Topsoil/ Soil Replacement and Soil Amendments .....	17
3.6 Water Management/Erosion Control Features.....	17
3.7 Seedbed Preparation .....	17
3.8 Seeding .....	17
3.9 Mulching.....	18
3.10 Noxious and Invasive Weed Control.....	18
<b>4.0 Monitoring and Maintenance Requirements .....</b>	<b>18</b>
<b>5.0 References .....</b>	<b>18</b>

## LIST OF TABLES

Table 2-1. Ponderosa Pine Community Seed Mix .....	3
--	---

## Final Surface Reclamation Plan

Operator	Kinder Morgan CO <sub>2</sub> Company, L.P. (Kinder Morgan)
API Number	05-033-06133
Well Name	Doe Canyon 3 (DC-3)
Legal Location	Section 6, Township 40 North, Range 17 West

### 1.0 Introduction

This reclamation plan has been prepared to meet the requirements and guidelines of the Onshore Oil and Gas Order No. 1. This plan describes the final reclamation procedures; any changes, if applicable, based on the Bureau of Land Management’s (BLM’s) designated final land use; and any mitigation measures associated with final reclamation that would be performed by the operator in order to receive a Final Abandonment Notice (FAN) as part of a Sundry Notice associated with their Doe Canyon 3 (DC-3) well. Final reclamation of the DC-3 location would be considered complete when the success criteria outlined in this plan have been met.

The final reclamation of DC-3 presents an opportunity to incorporate a designated public parking area into the recreational use of BLM lands in the surrounding area. This reclamation plan seeks to achieve the final land use objective of the BLM to establish a parking area and complete the other final abandonment objectives for the site, as well as the safe, continued operation of the existing Kinder Morgan facilities in the area.

The DC-3 CO<sub>2</sub> production well is located in Section 6, Township 40N Range 17W on BLM surface. The DC-3 CO<sub>2</sub> production well is currently being plugged and abandoned (early September 2020). The flowline associated with the DC-3 well would be abandoned in October 2020. A small section of the DC-3 flowline, approximately 450 feet, located immediately south of the DC-3 wellhead would be excavated and removed. The remaining 9,800 feet would be abandoned in place after being purged of gas and evacuated of any hydrocarbons and produced water.

In coordination with the Tres Rios BLM Field Office, a section of the gravel surface of the well pad, approximately 130 feet by 150 feet, would be left in place and used as a trailhead parking area for public land users. The remaining area of the DC-3 well pad would be re-contoured and re-seeded to match surrounding vegetation.

The Kinder Morgan contact person for this reclamation plan is:

Mike Hannigan, P.E.  
 EHS Supervisor  
 Kinder Morgan CO<sub>2</sub> Company, L.P.  
 17801 Highway 491  
 Cortez, Colorado 81321  
 970-882-2464

### 2.0 Pre-Reclamation Site Inspection

The pre-reclamation site inspection for the DC-3 was conducted on June 6, 2020 with Jen Jardine from the BLM; Mindy Paulek, Heather Riley and Tanner Paulek with Energy Inspection Service, LLC. (EIS); and Mike Hannigan, Jake Forsman, Jenna Emerick, Jason Romero and Neil Jones of Kinder Morgan.

During the inspection, an inventory of existing site condition and equipment was conducted. Reclamation procedures were discussed, including re-contouring, seed mix selection, weed abatement procedures, and any additional requirements needed to assist in reclamation. After the onsite, BLM discussed the reclamation internally and suggested converting a portion of the existing wellpad into a parking lot for trail access, which Kinder Morgan was agreeable to.

## 2.1 Vegetation Community

The vegetation community that best represents the surrounding project area is the Ponderosa Pine Vegetation Community. No Colorado Department of Agriculture Class A- or B- listed species were identified within the project area.

## 2.2 Proposed Reclamation Seed Mix

Disturbance that is not within the parking lot area would be re-contoured, and topsoil would be redistributed and prepared for seeding by the construction contractor. Ripping, disking, and seeding of the site would be done by Kinder Morgan’s construction contractor using the seed mix below, which is shown in Table 2-1. The proposed reclamation seed mix considers the existing vegetation on the proposed project site.

**Table 2-1. Ponderosa Pine Community Seed Mix**

Common Name	Scientific Name	Variety	Season	Form	PLS lbs/acre <sup>1</sup>
Muttongrass	<i>Poa fendleriana</i>	Ruin Canyon	Cool	Sod-forming	3.0
Western wheatgrass	<i>Pascopyrum smithii</i>	Arriba	Cool	Sod-forming	4.0
Bottle brush squirreltail	<i>Elymus elymoides</i>	Tusas or VNS	Cool	Bunch	3.0
Prairie Junegrass	<i>Koeleria macrantha</i>	VNS	Cool	Bunch	2.0
Antelope bitterbrush	<i>Purshia tridentata</i>	VNS	Cool	Shrub	2.0
American vetch	<i>Vicia americana</i>	VNS	Cool	Sod-forming	1.0

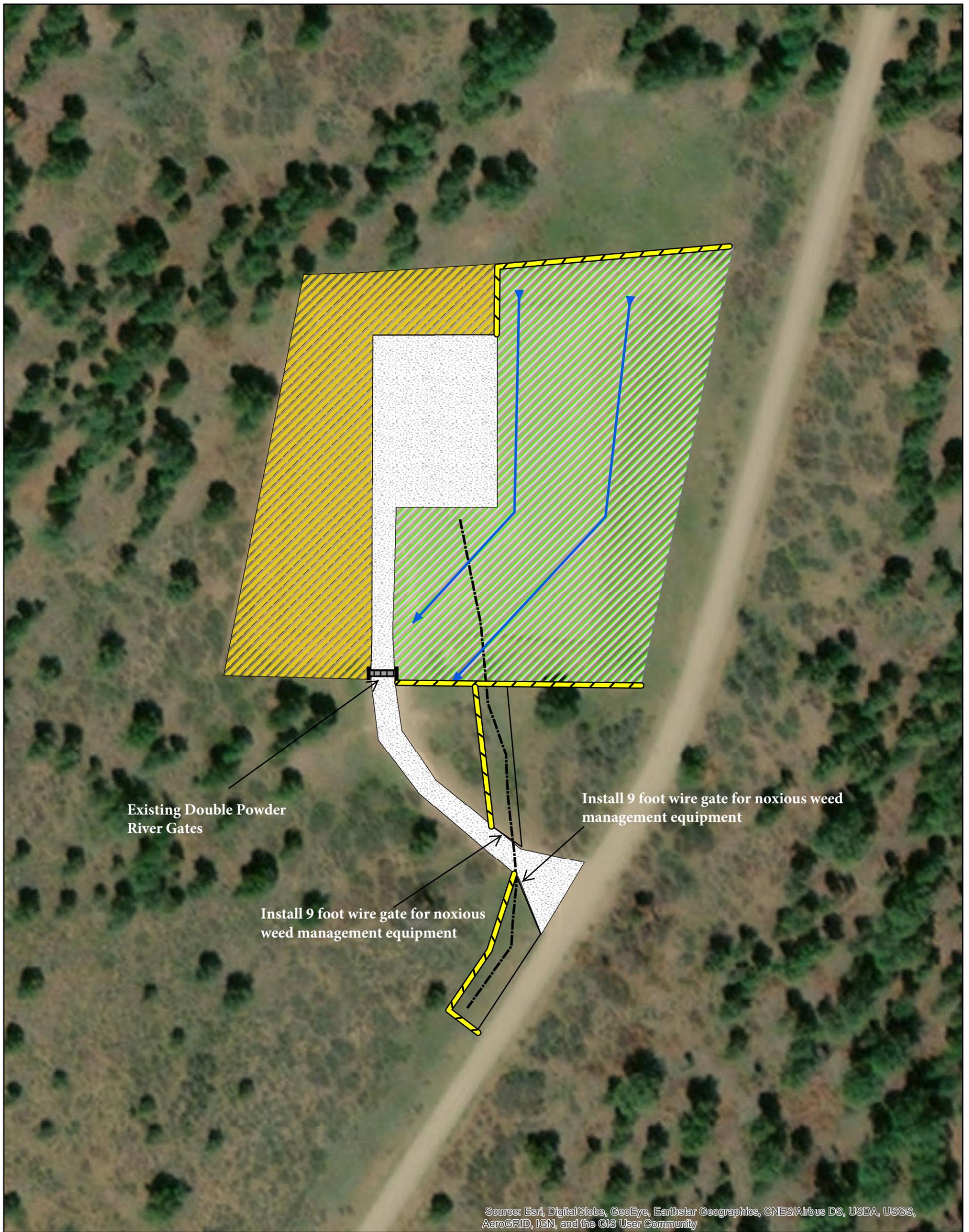
<sup>1</sup>Based on 60 PLS per square foot, drill seeded; double this rate (120 PLS per square foot) if broadcast or hydro-seeded.

## 2.3 Vegetation Reclamation Standards

The DC-3 Project is located on-lease within public lands managed by the BLM and within Kinder Morgan’s Doe Canyon Unit. Reclamation success would be determined by the reclamation percent cover standards of at least 80% of surrounding, undisturbed areas (background) within the same vegetative community. These standards must be met on BLM-managed lands during post-disturbance monitoring procedures in order for the BLM-TRFO to sign off on the attainment of vegetation reclamation standards.

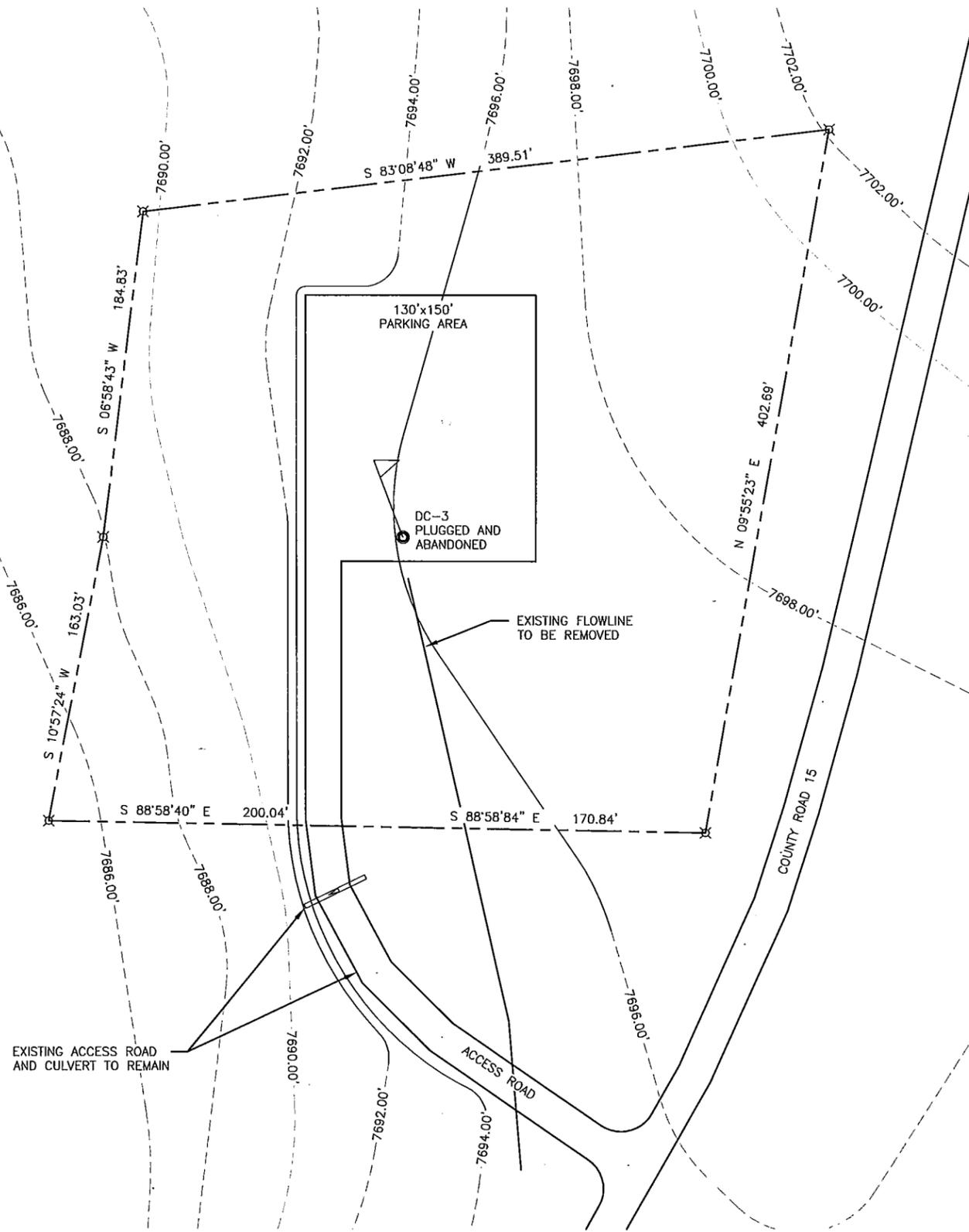
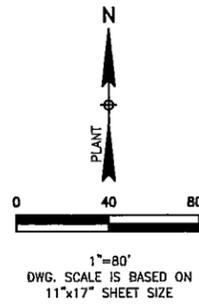
## 2.4 Proposed Reclamation and Stormwater Maps

---



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

<b>Legend</b>		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">REV. No.</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">DRAFT BY</th> <th style="width: 40%;">REVISION DESCRIPTION</th> <th style="width: 10%;">ENG.</th> <th style="width: 10%;">EOD.</th> <th style="width: 10%;">PE.</th> <th style="width: 10%;">APPROVALS</th> </tr> </thead> <tbody> <tr> <td> </td> </tr> </tbody> </table>		REV. No.	DATE	DRAFT BY	REVISION DESCRIPTION	ENG.	EOD.	PE.	APPROVALS								
REV. No.	DATE	DRAFT BY	REVISION DESCRIPTION	ENG.	EOD.	PE.	APPROVALS												
<b>BMP Type</b>	<div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, yellow 2px, yellow 4px); border: 1px solid black;"></span> Area to Remain Undisturbed</div> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; background-color: white; border: 1px solid black;"></span> New Wildlife Fencing</div> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; background-color: #cccccc; border: 1px solid black;"></span> Proposed Graveled Leave</div> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, yellow 2px, yellow 4px); border: 1px solid black;"></span> Area to be Re-Contoured</div> </div>																		
<div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; background-color: blue; border: 1px solid blue;"></span> Diversion Ditch</div> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; background-color: black; border: 1px solid black; border-style: dashed;"></span> Existing Culvert</div> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, yellow 2px, yellow 4px); border: 1px solid black;"></span> Wattle</div> <div style="display: flex; align-items: center;"><span style="width: 20px; height: 10px; border-top: 1px dashed black;"></span> Flowline to be Removed</div> </div>	<p>1:1,000</p>																		
<p><b>Kinder Morgan</b></p> <p><b>KINDER MORGAN</b> CO<sub>2</sub> COMPANY, L.P.</p>		<p><b>DC-3 Well Pad Reclamation Reclamation/Storm Water Map</b> S 6 TWP 40N Rng 17W Dolores CTY CO</p>																	
DRAWN BY: Jake Forsman		PAPER SIZE: 11"x17"																	
DATE: 09/04/2020																			



PLAN  
SCALE 1"=80'

NOTES:

INFORMATION BASED ON A SURVEY OR SURVEYS ON THE GROUND DATED: 09/28/2015  
 PROVIDED BY:  
 HUDDLESTON LAND SURVEYING  
 P.O. BOX KK - CORTEZ, CO. 81321  
 (970) 565-3330

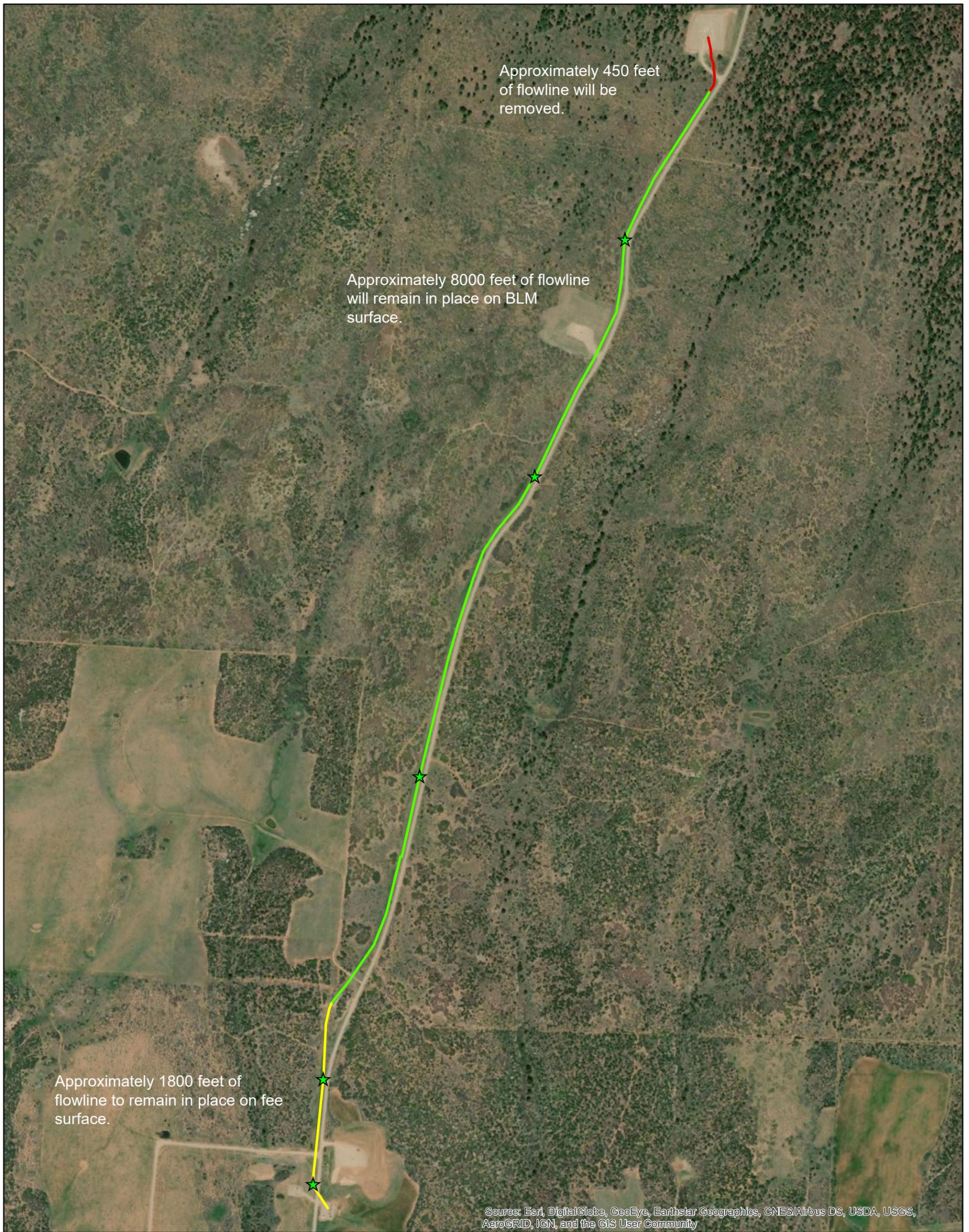
REVISIONS			
▲			
▲			
▲			
▲			
▲			
▲	ISSUED FOR REVIEW	4/15/20	GEG

**KINDER MORGAN**  
CO<sub>2</sub> COMPANY, L.P.

17801 HWY 491  
Cortez, CO 81321

REFERENCE TITLE SHEET DRAWING:  
SECTION 6, TOWNSHIP 40N., RANGE 17W NMPM

CO <sub>2</sub> WELL PAD SITE PLAN DC-3 WELL PAD RECLAMATION			
DOE CANYON FACILITIES		DOLORES, COLORADO	
DRAWN BY: GEG	4/15/20	REVIEWED BY:	SCALE: AS NOTED
CHECKED BY: JR		APPROVED BY:	DRAWING NUMBER WP-DC-3-PERM-005



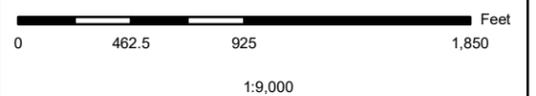
**Legend**

- ★ Annular Vents to be removed
- Flowline to Remain in PLaceon Fee Surface
- Flowline to Remain in Place on BLM Surface
- Flowline to be Removed

REV. No.	DATE	DRAFT BY	REVISION DESCRIPTION	ENG.	EOD.	PE.	APPROVALS



DC-3 Flowline Abandonment  
Abandonment Layout Map  
Dolores CTY CO



DRAWN BY: Jake Forsman  
DATE: 09/03/2020  
PAPER SIZE: 11"x17"

### 3.0 Reclamation Techniques

---

#### 3.1 Equipment and Facilities Removal

---

- In areas that would be reclaimed, the gravel present would be stripped and moved to the parking lot area.
- Existing fencing would remain in place, along with the addition of wildlife friendly fencing, which would prohibit grazing of cattle in the revegetation areas until it is established.
- The existing gate would remain in place to prevent cattle from entering the reseeded area and would be removed once the FAN is obtained. The gate would have signs instructing the public to keep the gate closed at all times.

Figure 1. Access Road.



Figure 2. Access Road Going on to Well Pad.



Figure 3. Southwest Corner.



Figure 4. Southeast Corner.



Figure 5. Northeast Corner.



Figure 6. Northwest Corner.



Figure 7. From Wellhead Looking North.



Figure 8. From Wellhead Looking East.



Figure 9. From Wellhead Looking South.



Figure 10. From Well Head Looking West.



Figure 11. Interim Reclamation.



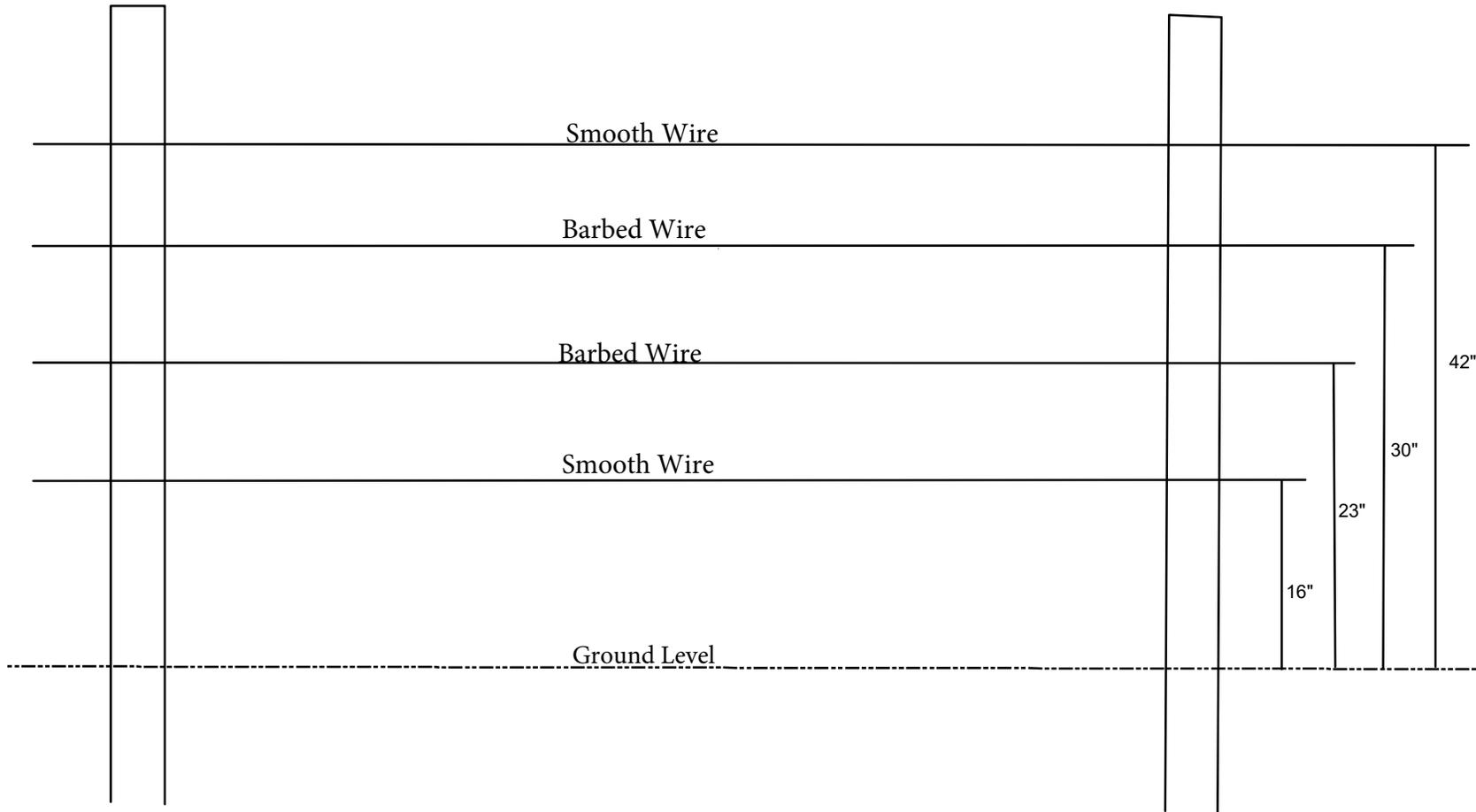
### 3.2 BLM Fencing Specifications

---

If fencing is installed to prevent livestock entry, the fence must be wildlife-friendly and built with these specifications:

- Wire Specifications
  - The top wire shall be no more than 42 inches above the ground.
  - There shall be at least 12 inches between the top two wires.
  - The bottom wire shall be at least 16 inches above the ground.
  - The top and bottom wires shall be smooth (not barbed).
- Post Specifications
  - Line Post shall be spaced at a maximum of 16 foot.
  - Line Post shall consist of 5-foot T-Post driven in 12 inches so a maximum of 48 inches is showing above the ground surface.
  - Corners shall be constructed out of 6-inch wooden post with double H-Braces in each corner.
  - Wooden post for H-Braces shall be set in concrete a minimum of 24 inches below the ground surface.
  - Wooden post shall have 60 inches of post showing above the ground surface.
  - Wooden post tops shall be even.
  - KM would permit the contractor to cut post tops to 60 inches as long as the minimum set depth is achieved.

A 9-foot wire gate shall be installed to allow for noxious weed equipment to enter the reclamation area. H-Braces shall be installed on both sides of the gate gap. The specific location of the gate would be shown on the site-specific reclamation maps. Below is a diagram showing the fencing wire spacing.



### 3.3 DC-3 Flowline Abandonment

#### Abandonment Methods

The northern-most 450 feet of the DC-3 flowline would be excavated and removed. The DC-3 flowline would be evacuated of produced water at the northern end of the section that would be abandoned in-place and ending at the Doe Canyon Manifold. The evacuated fluid would be captured and loaded onto a water truck and disposed of at one of Kinder Morgan's permitted UIC disposal wells.

Once hydrocarbons have been evacuated from the flowline, the southern end of the flowline would be capped using a bolted blind flange and the northern end would be capped by welding a steel plate to the cut-off end of the pipe. Both ends would be buried at least 3 feet below the ground surface. All above ground risers, including the manifold and annulus vents located along the flowline, would be excavated using non-mechanical excavation methods, removed, and plugged. There are four annulus vents located along the Right-of-Way (see attached map).

All excavations and disturbance associated with the abandonment of the DC-3 flowline would be in compliance with CDPHE and COGCC storm water and reclamation rules. The disturbance would be seeded with the BLM constructed seed mix in Table 2-1

#### Reasons for Selecting Abandonment Methods

The northern-most 450 feet of the DC-3 flowline would be removed at the request of BLM as it is in close proximity to the proposed parking area, and would also be an obstacle while re-contouring the southeast side of the DC-3 well location. The remaining 9,800 feet of flowline would be abandoned in-place. The decision to abandon the DC-3 flowline in-place was based on the identification of several applicable exceptions included in the "Flowline Abandonment In-Place Exception List" found in the COGCC 1100 Series Rules. The exceptions Kinder Morgan has identified for this Pre-Abandonment Notice are: 1105.d.(2)c. - The DC-3 flowline parallels the active DC-4 flowline having approximately 10 feet of separation for a distance of approximately 7,550 feet; 1105.d.(2)d. - Excavation of the flowline would cause significant damage to wildlife resources, topsoil, and vegetation; 1105.d.(2)e. - The entire DC-3 Flowline is within an Elk Winter Concentration Area; 1105.d.(2)f. - The DC-3 flowline parallels Dolores County Road 15 having approximately 25 feet of separation; and 1105.d.(2)f. - The DC-3 flowline crosses Dolores County Road 15 near the end point manifold.

#### Impacts to Public Health, Safety, Environment and Wildlife Resources

The in-place abandonment method would be less impactful to public health and safety than excavating the entire length of the flowline to remove the pipe. Due to the nature of the construction methods used for CO<sub>2</sub> flowlines, the removal process would require excavation of the entire flowline to remove the carbon steel pipe and the HDPE liner. Excavating and disturbing approximately 9,700 feet of ROW would increase the potential for a vehicle accident and potential human injury. Excavating within 10 feet of an active flowline with an operating pressure of 615 pounds per square inch (psi) poses a serious safety risk.

Abandonment in-place reduces the potential for water and wind erosion of the excavated soil. The amount of heavy equipment activity required to excavate and remove the pipe may increase the potential for unplanned releases of fuel and oil.

The existing DC-3 and DC-4 flowline Right-of-Way (ROW) has been re-vegetated successfully. There is a mix of native grasses and gambel oak currently growing on the DC-3 ROW (see attached photo Interim Reclamation). Wildlife habitat would not be unnecessarily fragmented by the creation of another linear disturbance.

Kinder Morgan believes abandoning the approximate 9,800 feet of the DC-3 flowline would be the best option for all stakeholders involved. The minimized disturbance area and high-risk work would protect public health, safety, the environment, and wildlife resources

### 3.4 Parking Area Design

---

The proposed parking area would be 110 feet by 140 feet in size. This area would be compacted, stabilized, and gravelled.

### 3.5 Topsoil/ Soil Replacement and Soil Amendments

---

It was determined that no soil amendments are needed for this location based upon field observation during the pre-reclamation inspection. Soil from Kinder Morgan's nearby Doe Canyon Plant would be brought in to fill in the ditch along the excavated pipeline route to help compensate for the settling of soil. Topsoil that was stock piled on the east side of the pad would be placed over the sub-soils upon completion of recontouring operations and prior to final seedbed preparation. Spreading shall not be done when the ground or topsoil is wet.

### 3.6 Water Management/Erosion Control Features

---

Water management features can be found depicted on the Proposed Reclamation and Stormwater Maps in Figure 2.4. The proposed project is located on a slight hill with erosion occurring on the cut slope. To accommodate for the runoff and erosion, multiple diversion ditches, bumps, troughs, and check dams would be installed across the reclamation area. See Figure 2.4 for placement of water management features.

### 3.7 Seedbed Preparation

---

Disturbed areas would be re-contoured to blend with the surrounding landscape, emphasizing restoration of the existing drainage patterns and landform to pre-construction condition, to the extent practicable. As mentioned above, recontouring would be done to create an undulating topographic pattern across the area. Imported topsoil would be evenly redistributed across the reclaimed area prior to final seedbed preparation. Topsoil would not be redistributed when the ground or topsoil is wet. Seedbed preparation within compacted areas would include ripping to a minimum depth of 18 inches, unless bed rock is encountered at a shallower depth, or the mechanical ripping tines are less than 30 inches from a buried Kinder Morgan pipeline. Spacing furrows would be 1-foot apart. Ripping would be conducted perpendicularly in two phases, where practicable. If large clumps/clods result from the ripping process, disking would be conducted perpendicular to slopes in order to provide terracing and minimize runoff and erosion. Final seedbed preparation would consist of raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting.

### 3.8 Seeding

---

The seed mix chosen for this project area is listed in Table 2-1. Seeding would occur immediately following recontouring and seedbed preparation. A disc-type seed drill with two boxes for various seed sizes would be utilized for seeding the disturbed areas of the site. Kinder Morgan or its reclamation contractor would ensure that perennial grasses and shrubs are planted at the appropriate depth. In situations where differing planting depths are not practicable with the equipment being used, the entire mix would be planted no deeper than 0.25 inch. A drag, packer, or roller would follow the seeder to ensure uniform seed coverage and adequate compaction. Seeding would be run perpendicular to slopes in order to minimize runoff and erosion.

Drill seeding may be used on well-packed and stable soils that occur on gentler slopes and where tractors and drills can safely operate. Where drill seeding is not practicable due to topography, the contractor would hand-broadcast seed using a "cyclone" hand seeder or similar broadcast seeder. Broadcast application of seed requires a doubling of the drill-seeding rate. The seed would then be raked into the ground so the seed is planted no deeper than 0.25 inch below the surface.

### 3.9 Mulching

---

To increase moisture retention, reduce erosion, and increase the success of revegetation, all reseeded areas would be mulched. Approximately two tons per acre of certified weed free straw or hay mulch would be applied and mechanically crimped into the soil by the reclamation contractor immediately upon reseeded.

### 3.10 Noxious and Invasive Weed Control

---

Kinder Morgan would control any noxious and invasive weeds by conducting annual inspections of the site. If any noxious weeds are identified, they would be managed in accordance with Kinder Morgan's Weed Management Plan.

## 4.0 Monitoring and Maintenance Requirements

---

After the earthwork and seeding is completed, Kinder Morgan would submit a Sundry Notice informing the BLM that reclamation has been completed, as well as requesting an inspection of the earthwork and seeding. A joint inspection may be conducted by Kinder Morgan and the BLM. Kinder Morgan would monitor the revegetation of this site on an annual basis to ensure progress and reclamation success. Reclamation would be deemed successful once a uniform vegetative cover has been established with a total plant cover being at least 80 percent of the average surrounding area. Additionally, the total cover of noxious weeds (including species designated as "undesirable" by the county) must not be any greater than that which exists in the surrounding area. Non-noxious plant cover is defined as the vertical projection of non-noxious plant canopies (including herbaceous and shrub species) when viewed from above. Non-noxious plant cover shall be measured or estimated using a valid and reliable method, such as point-intercept.

During annual inspections, evidence of the following criteria would need to be observed and documented on an inspection form. In addition to the percent cover, the following criteria will be evaluated and considered in the success of reclamation:

- A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and invasion by non-native plants and to reestablish wildlife habitat or forage production.
  - The established plant community should consist of species included in the seed mix and/or desirable species occurring in the nearby natural vegetation. See Table 3-2 and Table 3-3 for species.
- Erosion control is sufficient so that water naturally infiltrates into the soil and gullying, head cutting, slumping, and deep or excessive rills (greater than three inches) are not observed.
- Erosion features are equal to or less than surrounding area.
- The site is free of state- or county-listed noxious weeds, oil field debris and equipment, and contaminated soil. Invasive and non-native weeds are controlled.

## 5.0 References

---

43 CFR Part 3160, "Onshore Oil and Gas Order No. 1; Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Approval of Operations," 72 Federal Register 44 (March 2007), pp.

“Flowline Rulemaking” Flowline Rulemaking Docket No. 171200767, 13 Feb. 2018,  
[cogcc.state.co.us/documents/reg/Rules/FlowlineRulemaking/Flowline\\_Adopted Rule 2\\_13\\_18.pdf](http://cogcc.state.co.us/documents/reg/Rules/FlowlineRulemaking/Flowline_Adopted Rule 2_13_18.pdf).