

State of Colorado Oil and Gas Conservation Commission

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Document Number:

401494294

Receive Date:

Report taken by:

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: <u>KINDER MORGAN CO2 CO LP</u>	Operator No: <u>46685</u>	Phone Numbers
Address: <u>1001 LOUISIANA ST SUITE 1000</u>		Phone: <u>(970) 882-5532</u>
City: <u>HOUSTON</u>	State: <u>TX</u>	Zip: <u>77002</u>
Contact Person: <u>Michael Hannigan</u>	Email: <u>michael_hannigan@kindermorgan.com</u>	Mobile: <u>(970) 882-5521</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9853 Initial Form 27 Document #: 200440388

PURPOSE INFORMATION

- | | |
|--|---|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input checked="" type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input checked="" type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: <u>LOCATION</u>	Facility ID: <u>322126</u>	API #: _____	County Name: <u>DOLORES</u>
Facility Name: <u>DOE CANYON-N40N17W 18SENE</u>		Latitude: <u>37.730423</u>	Longitude: <u>-108.757943</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SENE</u>	Sec: <u>18</u>	Twp: <u>40N</u>	Range: <u>17W</u>
		Meridian: <u>N</u>	Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Non-irrigated agricultural

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

There is a stock watering pond located approximately 1,000 feet southwest of the former drilling pit.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

☒ E&P Waste

☐ Other E&P Waste

☐ Non-E&P Waste

☐ Produced Water

☐ Workover Fluids

☐ Oil

☐ Tank Bottoms

☐ Condensate

☐ Pigging Waste

☐ Drilling Fluids

☐ Rig Wash

☒ Drill Cuttings

☐ Spent Filters

☐ Pit Bottoms

☐ Other (as described by EPA)

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	TDS > 910-1	Groundwater sampling & laboratory analysis
Yes	SOILS	EC, SAR & TPH > 910-1 < 3' bgs	Soil sample collection & laboratory analysis

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Initial actions included conducting a review of water well databases to identify water wells within 1/2 mile of the location and preparing a scope of work for the assessment of the former drilling pit.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

☐ Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Proposed Groundwater Sampling

☒ Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Groundwater samples will be collected from six (6) existing monitoring wells on a semi-annual basis (April and October) and submitted to an accredited laboratory for analysis of TDS, chloride and sulfate for the purpose of tracking the attenuation of those contaminants.

Proposed Surface Water Sampling

☐ Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

☐ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 8

Number of soil samples exceeding 910-1 0

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 37500

NA / ND

ND Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR 7.01

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 6

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 20'

Number of groundwater monitoring wells installed 6

Number of groundwater samples exceeding 910-1 2

ND Highest concentration of Benzene (µg/l)

ND Highest concentration of Toluene (µg/l)

ND Highest concentration of Ethylbenzene (µg/l)

ND Highest concentration of Xylene (µg/l)

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

0 Number of surface water samples exceeding 910-1

If surface water is impacted, other agency notification may be required.

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards)

Volume of liquid waste (barrels)

☐ Is further site investigation required?

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Kinder Morgan excavated all of the buried drilling waste and transported it to the Montezuma County Landfill for disposal.

REMEDICATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

The topsoil and clean soil cover located on top of the former drilling pits was removed and stockpiled on-site. The drilling waste was excavated, loaded into trucks and transported to the Montezuma County Landfill for disposal. The clean soil stockpiled on-site was placed in the former drilling pits and the remaining clean soil needed to backfill the excavation was imported from off-site. The backfilled soil was graded to match the surrounding contours. The topsoil stockpiled on-site was spread over the backfilled pits and additional topsoil was imported as needed to establish a seed bed. The final cover was prepared by disking, seeding and covering/crimping certified weed-free straw into the topsoil.

Soil Remediation Summary

☐ In Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

☐ Ex Situ

_____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____
_____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

☐ _____ Bioremediation (or enhanced bioremediation)
☐ _____ Chemical oxidation
☐ _____ Air sparge / Soil vapor extraction
Yes _____ Natural Attenuation
☐ _____ Other _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

Remediation of TDS in groundwater will be accomplished via natural attenuation. The proposed monitoring plan includes semi-annual (April and October) groundwater elevation measurement and water quality sample collection from the six (6) existing monitoring wells at the DC-5 location. Each sample will be evaluated at an accredited laboratory for TDS, chloride and sulfate. A map showing the locations of the existing groundwater monitoring wells is shown in the attached report prepared by Arcadis Design & Consultancy, dated October 10, 2017.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report
☐ Other _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

There was no beneficial use of the E&P waste derived from this remediation project.

Volume of E&P Waste (solid) in cubic yards 14775

E&P waste (solid) description Drilling waste

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Montezuma County Landfill

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No _____

Do all soils meet Table 910-1 standards? Yes _____

Does the previous reply indicate consideration of background concentrations? Yes _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? No _____

Is additional groundwater monitoring to be conducted? Yes _____

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

This well location is in interim reclamation status. The clean soil stockpiled on-site was placed in the former drilling pits and the remaining clean soil needed to backfill the excavation was imported from off-site. The backfilled soil was graded to match the surrounding contours. The topsoil stockpiled on-site was spread over the backfilled pits and additional topsoil was imported as needed to establish a seed bed. The final cover was prepared by disking, seeding and covering/crimping certified weed-free straw into the topsoil. The reclaimed area will be monitored for noxious weeds.

Is the described reclamation complete? Yes _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☒ Interim? ☐ Final?

Did the Surface Owner approve the seed mix? Yes _____

If NO, does the seed mix comply with local soil conservation district recommendations? Yes _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/02/2016

Date of commencement of Site Investigation. 11/07/2016

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 07/24/2017

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. 09/11/2017

Date of completion of Reclamation. _____

OPERATOR COMMENT

The entire volume of waste was removed from the former drilling pits at the DC-5 location. A total of 14,775 cubic yards of waste material consisting of drill cuttings mixed with soil were excavated, loaded into trucks and transported to the Montezuma County Landfill for disposal. The area of the former pits was excavated down to sandstone bedrock, a depth that varied between 15 and 20 feet below the surrounding ground surface. A total of eight (8) soil samples were collected from the sidewalls of the excavation at depths ranging between six (6) and nine (9) feet below ground surface to confirm that no drilling waste remained at the site. Soil samples were not collected from the bottom of the excavation since it was advanced to hard sandstone bedrock. The laboratory analytical reports for the confirmation samples along with a sample location map are included as an attachment to this supplemental Form 27.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Michael Hannigan

Title: EHS Supervisor

Submit Date: _____

Email: michael_hannigan@kindermorgan.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: _____

Date: _____

Remediation Project Number: 9853

COA Type

Description

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Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num

Name

401494320	DISPOSAL MANIFESTS
401494322	DISPOSAL MANIFESTS
401494324	DISPOSAL MANIFESTS
401494328	DISPOSAL MANIFESTS
401494329	DISPOSAL MANIFESTS
401494330	DISPOSAL MANIFESTS
401494331	DISPOSAL MANIFESTS
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401494409	DISPOSAL MANIFESTS
401494410	DISPOSAL MANIFESTS
401494411	DISPOSAL MANIFESTS
401494412	DISPOSAL MANIFESTS
401494413	DISPOSAL MANIFESTS
401494414	ANALYTICAL RESULTS
401494415	SOIL SAMPLE LOCATION MAP
401494416	SITE INVESTIGATION REPORT

Total Attach: 83 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)