

State of Colorado Oil and Gas Conservation Commission

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SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 66561

Name of Operator: OXY USA Inc.

Address: 760 Horizon Drive, Suite 101

City: Grand Junction State: CO Zip: 81506

Contact Name and Telephone:

Blair K. Rollins

No: 970.263.3637

Fax: 970.263.3694

API Number: _____ County: Mesa

Facility Name: Brush Creek Gathering System

Facility Number: 412237 (Spill point #441603)

Well Name: _____ Well Number: _____

Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWNE, Sec 14, T9S, R94W, 6th PM Latitude: 39.280848 Longitude: -107.846308

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Production fluids

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☒ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Agricultural crop land

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Fughes clay loam, 2-6% slopes (Map symbol 37)

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Depth to groundwater is approximately 100 BGS, water well approximately 2,020' southwest, surface water approximately 800' west, intermittent stream approximately 135' south.

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

☒ Soils☐ Vegetation☐ Groundwater☐ Surface Water

Extent of Impact:

Vertical defined, horizontal undetermined due to infrastructure

N/A

To be determined

N/A

How Determined:

Soil samples and PID field screening

Visual

To be determined

Laboratory analysis

REMEDIAL WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Please reference COGCC Form 19 Initial spill report #400830028 and COGCC Form 19
Supplemental spill report #400833359.

Describe how source is to be removed:

Following identification of a spill, Oxy excavated a 45' long by 30' wide footprint to a depth of 10' deep. The excavated material was placed within a lined containment for staging, stabilization, characterization, and off-site disposal and onsite treatment. Based on soil samples within the excavation, majority of the impacted material has been removed. Following assessment soil samples of the excavation, Oxy is pursuing to backfill the excavation and complete additional insitu remediation and downgradient monitoring due to safety and access within the area of the excavation.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed

facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Impacted soil was removed from the excavation and placed on liners to allow for staging, stabilization, characterization, and off-site disposal and onsite treatment. Oxy will treat the excavation bottom and sidewalls with a solution of MibroBlaze, following manufacturer specifications, to remediate the impacted soil which is not able to be removed due to operational equipment on location. Based on sample results from the excavation, Oxy will concentrate a larger amount of MicroBlaze on the areas with higher concentrations of impacted soil.

Submit Page 2 with Page 1



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

Page 2
REMEDIATION WORKPLAN (Cont.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
Oxy collected a surface water sample from downgradient of the excavation area and no impacts were identified. Oxy will complete installation of two downgradient groundwater monitoring wells to determine if any impact has migrated offsite. Oxy will conduct quarterly groundwater monitoring and assess groundwater quality in the area downgradient of the spill. Upon receipt of quarterly water samples below COGCC Table 910-1 groundwater standards, Oxy will reduce groundwater monitoring to annually to demonstrate migration of the contamination has not occurred.

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. Use additional sheet for description if required.

Oxy will complete insitu bioremediation of the impacted soil that can not be removed due to existing operational equipment and safety and access concerns. The insitu bioremediation will be completed by applying MicroBlaze to the excavation bottom and sidewalls following manufacturer specifications. Based on a conversation with Carlos Lujan on May 22, 2015, Oxy will backfill the excavation and return the area to the existing grade for continued operation. Oxy will then install the upgraded secondary containment and tanks on the location and return them to operation.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:

Soil samples from within the excavation footprint have been collected and tabulated in the attached spreadsheet. One additional soil sample from the west wall and one from the south wall will be collected on May 26, 2015 and will be provided to the COGCC under Form 4 cover as an update to the attached sample table. Oxy will conduct water sampling of the monitoring wells and final assessment of the impacted soil area.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Impacted soil was removed from the excavation and placed on liners to allow for staging, stabilization, characterization, and off-site disposal and onsite treatment. The material hauled for offsite disposal was taken to RNI Piceance Creek. The soil left on liners on the location will be aerated to allow for stabilization of the entire soil pile prior to sampling. Once characterized, Oxy will either dispose of or reuse the soil and notify the COGCC of the final disposition of this soil under Form 4 cover.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 4/23/2015 Date Site Investigation Completed: 5/22/2015 Date Remediation Plan Submitted: 5/27/2015
Remediation Start Date: 4/23/2015 Anticipated Completion Date: _____ Actual Completion Date: _____

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

Print Name: Blair K. Rollins

Signed: _____

Title: HES Specialist

Date: 5/27/2015

OGCC Approved: _____ Title: _____ Date: _____

Sample Identifications (mg/kg)

	Lab Report #	15041696	1505054	1505054	1505054	1505872	1505872	1505872		
	Date Sampled	04/28/2015	04/30/2015	04/30/2015	04/30/2015	05/14/2015	05/14/2015	05/14/2015	05/26/2015	05/26/2015
	Sample Name	Bottom - topsoil	N Wall	E Wall	Bottom - Low	S Bottom Low	N hole bottom	N hole spoil	South Wall 8'	West Wall 8'
Organics in Soil	MCL (mg/Kg)									
TPH (GRO and DRO) - Sen Area	500	BDL	510	BDL	47	17	33	2689		
Benzene	0.17	1.3	0.4	1.1	0.79	0.36	BDL	1.5		
Toluene	85	0.039	13	BDL	0.094	BDL	0.16	0.081		
Ethylbenzene	100	0.15	2	0.130	0.32	0.04	0.034	8		
Xylenes	175	0.15	46	1.60	3.3	0.58	0.68	140		
Organics in Soil (PAH's)										
Acenaphthene	1000		BDL	BDL	BDL	BDL	BDL	BDL		
Anthracene	1000		BDL	BDL	BDL	BDL	BDL	BDL		
Benzo(A)anthracene	0.22		BDL	BDL	BDL	BDL	BDL	BDL		
Benzo(B)fluoranthene	0.22		BDL	BDL	BDL	BDL	BDL	BDL		
Benzo(K)fluoranthene	2.2		BDL	BDL	BDL	BDL	BDL	BDL		
Benzo(A)pyrene	0.022		BDL	BDL	BDL	BDL	BDL	BDL		
Chrysene	22		BDL	BDL	BDL	BDL	BDL	BDL		
Dibenzo(A,H)anthracene	0.022		BDL	BDL	BDL	BDL	BDL	BDL		
Fluoranthene	1000		BDL	BDL	BDL	BDL	BDL	BDL		
Flourene	1000		BDL	BDL	BDL	BDL	BDL	0.019		
Indeno(1,2,3,C,D)pyrene	0.22		BDL	BDL	BDL	BDL	BDL	BDL		
Naphthalene	23		0.41	BDL	BDL	BDL	BDL	BDL		
Pyrene	1000		BDL	BDL	BDL	BDL	BDL	BDL		
Inorganics in Soil										
EC	<4 mmhos/cm or 2X background		1.90	3.3	3.3	0.9.	0.63	1.8		
SAR	<12		1.9	3.1	0.81	1.1	2	2		
pH	6-9		7.8	7.2	7.1	7.4	8.4	8.2		
Metals in Soils										
Arsenic	0.39		6.4	5.5	4.9	2.4	1.1	6.1		
Barium	15,000		220	170	140	160	120	190		
Cadmium	70		BDL	BDL	BDL	BDL	BDL	BDL		
Chromium III	120,000		18.0	16.0	13	12	10	12		
Chromium VI	23		BDL	BDL	BDL	BDL	BDL	BDL		
Copper	3100		23.0	21.0	20	25	31	32		
Lead	400		11.0	9.6	8.7	8.5	16	13		
Mercury	23		0.018	BDL	BDL	0.036	0.054	0.1		
Nickel	1600		23.0	20.0	22	18	18	18		
Selenium	390		BDL	BDL	BDL	BDL	BDL	BDL		
Silver	390		BDL	BDL	BDL	BDL	BDL	BDL		
Zinc	23,000		56.0	55.0	54	64	70	59		

North Wall
North Hole Bottom
East Wall
West Wall 8'
South Bottom Low
South Wall 8'

- ⊗ Proposed Down-Gradient MW Location
- Excavation Characterization Sample Location
- Approximate Spill Excavation



Brush Creek Compressor Station (Fac ID 412237) spill occurred on 4/23/2015

QtrQtr: NWNE Section: 14 Township: 9S Range: 94W 6th PM

