

State of Colorado  
Oil and Gas Conservation Commission

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FOR OGCC USE ONLY  
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REM 9154

## 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): Pit Closure

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 53255

Name of Operator: Maralex Resources, Inc.

Address: PO Box 338

City: Ignacio

State: CO Zip: 81137

Contact Name and Telephone:

Naomi Azulai

No: 970-563-4000

Fax: 970-563-4116

API Number:

County: Rio Blanco

Facility Name: Lowell Brady 23-C-3X

Facility Number: 117300

Well Name: Lowell Brady

Well Number: 23-3X

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SWSE, 23, 4S, 101W

Latitude: Longitude:

### TECHNICAL CONDITIONS

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

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.): non-cropland, undeveloped

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan:

Potential receptors (water wells within 1/4 mi, surface waters, etc.):

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

limited to pit

How Determined:

lab analysis

### REMEDIALTION WORKPLAN

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

Soils were sampled from the pit on 6/17/2015. The soils were analyzed for the COGCC's Table 910-1 parameters.

Describe how source is to be removed:

No source removal is required. The contaminants in the soil do not exceed the Table 910-1 limits with the exception of Arsenic which occurs naturally in the soils in this area at higher than limit levels.

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.:

No remediation is proposed before backfilling the pit. The contaminants in the soil do not exceed the Table 910-1 limits with the exception of Arsenic which occurs naturally in the soils in this area at higher than limit levels.



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

**REMEDIATION WORKPLAN (Cont.)**

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

There is no suspicion that groundwater has been impacted.

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.

The pit will be reclaimed by backfilling it with soil from the earthen berms and graded to match site.

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:

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

No E&P waste has been generated.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 6/17/2015 Date Site Investigation Completed: 6/30/2015 Date Remediation Plan Submitted: 6/30/2015  
Remediation Start Date: \_\_\_\_\_ Anticipated Completion Date: 9/2015 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: Naomi Azulai Signed: \_\_\_\_\_

Title: Production Technician Date: 6/30/2015

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Table 910-1 Parameters**  
**Summary of Lab Results from Sample Collected from Lowell Brady 23-3X Pit**  
**Facility ID # 117300 6/17/2015**

Contaminant of Concern in Soil	COGCC Table 910-1 Allowable Conc.	Sample Analysis Results Low Point in Pit	Notes
<b>Organic Compounds</b>			
TPH (DRO + GRO) (mg/kg)	500	< 10.0 + 60.5 + < 10.0 = < 80.5	
Benzene (mg/kg)	0.17	< 0.050	
Toluene (mg/kg)	85	< 0.050	
Ethylbenzene (mg/kg)	100	< 0.050	
Xylenes (total) (mg/kg)	175	< 0.150	
Acenaphthene (mg/kg)	1,000	< 0.003	
Anthracene (mg/kg)	1,000	< 0.003	
Benzo(A)anthracene (mg/kg)	0.22	< 0.016	
Benzo(B)fluoranthene (mg/kg)	0.22	< 0.003	
Benzo(K)fluoranthene (mg/kg)	2.2	< 0.004	
Benzo(A)pyrene (mg/kg)	0.022	0.010	
Chrysene (mg/kg)	22	0.052	
Dibenzo(A,H)anthracene (mg/kg)	0.022	< 0.003	
Fluoranthene (mg/kg)	1,000	< 0.007	
Fluorene (mg/kg)	1,000	< 0.003	
Indeno(1,2,3,C,D)pyrene (mg/kg)	0.22	< 0.003	
Napthalene (mg/kg)	23	< 0.002	
Pyrene (mg/kg)	1,000	< 0.003	
<b>Inorganics</b>			
Electrical Conductivity (EC) (mmhos/cm)	<4 or 2x background	2.54	
Sodium Adsorption Ratio (SAR)	<12	9.09	
pH	6 to 9	7.71	
<b>Metals</b>			
Arsenic (mg/kg)	0.39	7.09	Typical of background values
Barium (LDNR True Total Barium) (mg/kg)	15,000	170	
Boron (Hot Water Soluble) mg/L	2	1.42	
Cadmium (mg/kg)	70	< 5.00	
Chromium III (mg/kg)	120,000	< 12.0	
Chromium VI (mg/kg)	23	< 12.0	
Copper (mg/kg)	3,100	24.7	
Lead (inorganic) (mg/kg)	400	18.3	
Mercury (mg/kg)	23	0.308	
Nickel (Soluble Salts) (mg/kg)	1,600	18.7	
Selenium (mg/kg)	390	< 20.0	
Silver (mg/kg)	390	< 5.00	
Zinc (mg/kg)	23,000	93.9	



