

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
402893773  
Receive Date:  
12/10/2021  
Report taken by:  
RICK ALLISON

Site Investigation and Remediation Workplan (Initial 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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: <u>MARKUS PRODUCTION, INC</u>	Operator No: <u>53790</u>	<b>Phone Numbers</b>
Address: <u>39 FAIRWAY LANE</u>		
City: <u>LITTLETON</u>	State: <u>CO</u>	Zip: <u>80123</u>
Contact Person: <u>Mark Brown</u>	Email: <u>mark@markusproduction.com</u>	
		Phone: <u>(720) 350-8858</u>
		Mobile: <u>(720) 350-8858</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21194 Initial Form 27 Document #: 402893773

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: \_\_\_\_\_

SITE INFORMATION

Yes Multiple Facilities

Facility Type: <u>PIT</u>	Facility ID: <u>111638</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>LIVENGOOD</u>	Latitude: <u>40.591562</u>	Longitude: <u>-104.023283</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENW</u>	Sec: <u>7</u>	Twp: <u>7N</u>	Range: <u>59W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>LOCATION</u>	Facility ID: <u>481140</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>LIVENGOOD TANK BATTERY</u>	Latitude: <u>40.591542</u>	Longitude: <u>-104.023588</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENW</u>	Sec: <u>7</u>	Twp: <u>7N</u>	Range: <u>59W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: OFF-LOCATION FLOWLINE Facility ID: 481142 API #: \_\_\_\_\_ County Name: WELD  
Facility Name: Production Line Latitude: 40.591542 Longitude: -104.023588  
\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
QtrQtr: SENW Sec: 7 Twp: 7N Range: 59W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Building Units  
1.5 miles to the East  
Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No  
Is groundwater less than 20 feet below ground surface? No

**Other Potential Receptors within 1/4 mile**

None

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input type="checkbox"/> Oil                       | <input type="checkbox"/> Tank Bottoms                |  |
| <input type="checkbox"/> Condensate                | <input type="checkbox"/> Pigging Waste               |  |
| <input type="checkbox"/> Drilling Fluids           | <input type="checkbox"/> Rig Wash                    |  |
| <input type="checkbox"/> Drill Cuttings            | <input type="checkbox"/> Spent Filters               |  |
|  | <input type="checkbox"/> Pit Bottoms                 |  |
|  | <input type="checkbox"/> Other (as described by EPA) | _____                                  |

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	UNKNOWN	Laboratory Analytical & Field Screening

## INITIAL ACTION SUMMARY

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

The production facility, associated produced water pit and flowline for the Livengood 7-7 well are being decommissioned. The offsite flowline has been approved for abandonment in place per Form 44 document # 402879474.

## 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 ):

Five soil samples will be collected from the produced water pit ID# 111638, one soil sample will be collected from under each tank and the heater treater (also the endpoint of the Livengood 7-7 flowline to be abandoned in place), and one soil sample from the start point of the Livengood 7-7 flowline. All soil samples will be field screened for visual staining and VOCs. In absence of any elevated PID readings, soil samples from the pit will be submitted for laboratory analysis of TPH, BTEX, pH, EC and SAR. If any visual staining or any PID readings exceeding background VOC concentrations are observed at any of the other field screening locations, the soil samples from those locations will be submitted for laboratory analysis. A Soil Investigation Map is attached.

### Proposed Groundwater Sampling

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

No groundwater is expected to be encountered.

### 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

### NA / ND

Number of soil samples collected     0    

           Highest concentration of TPH (mg/kg)           

Number of soil samples exceeding 915-1           

           Highest concentration of SAR

Was the areal and vertical extent of soil contamination delineated? \_\_\_\_\_

BTEX > 915-1 \_\_\_\_\_

Approximate areal extent (square feet) \_\_\_\_\_

Vertical Extent > 915-1 (in feet) \_\_\_\_\_

**Groundwater**

Number of groundwater samples collected \_\_\_\_\_ 0

Highest concentration of Benzene (µg/l) \_\_\_\_\_

Was extent of groundwater contaminated delineated? No \_\_\_\_\_

Highest concentration of Toluene (µg/l) \_\_\_\_\_

Depth to groundwater (below ground surface, in feet) \_\_\_\_\_

Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

Number of groundwater monitoring wells installed \_\_\_\_\_

Highest concentration of Xylene (µg/l) \_\_\_\_\_

Number of groundwater samples exceeding 915-1 \_\_\_\_\_

Highest concentration of Methane (mg/l) \_\_\_\_\_

**Surface Water**

0 Number of surface water samples collected

Number of surface water samples exceeding 915-1

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**

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

Is soil impacts exceeding Table 915-1 concentrations are encountered as a result of this investigation, the impacted soils will either be excavated and hauled to the Pawnee Waste facility near Grover, Colorado or potentially land farmed onsite after consultation with the COGCC and the surface owner.

**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.

After the excavation of the impacted soils (if required), additional soil samples will be collected from the extents of the excavation areas to confirm compliance via laboratory analysis of those samples.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Land Treatment

\_\_\_\_\_ Bioremediation (or enhanced bioremediation)

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Other \_\_\_\_\_

### Groundwater Remediation Summary

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ 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 PROGRESS UPDATE

### PERIODIC REPORTING

**Approved Reporting Schedule:**

Quarterly     Semi-Annually     Annually     Other \_\_\_\_\_

**Request Alternative Reporting Schedule:**

Semi-Annually     Annually     Other \_\_\_\_\_

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

**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? \_\_\_\_\_

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

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

E&P waste (solid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

# 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.

Following decommissioning of the site, the location be reclaimed in accordance with COGCC 1000 series regulations.

Is the described reclamation complete? \_\_\_\_\_

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

Interim  Final

Did the Surface Owner provide the seed mix? \_\_\_\_\_

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

## SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/10/2022

Proposed site investigation commencement. \_\_\_\_\_

Proposed completion of site investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

\_\_\_\_\_

**OPERATOR COMMENT**

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

Signed: Mark Brown

Title: President

Submit Date: 12/10/2021

Email: mark@markusproduction.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: RICK ALLISON

Date: 12/10/2021

Remediation Project Number: 21194

### Condition of Approval

**COA Type**

**Description**

	<p>Clarification of Operator proposed soil analyses:</p> <ol style="list-style-type: none"> <li>1. Soil samples beneath the treater, tanks and a flowline end points also need to be analyzed for TPH (C6-C36), BTEX, naphthalene, 1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene; pH, EC, SAR and boron (hot water soluble)</li> <li>2. Pit soil samples will be analyzed for: TPH (C6-C36), BTEX, naphthalene, 1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene; pH, EC, SAR and boron (hot water soluble)</li> <li>3. If impacts are apparent based on field evidence or laboratory results samples must be analyzed for the complete Table 915-1 list.</li> </ol>
	<p>Note to Operator: Location is within mapped High Priority Habitat for Pronghorn Winter Concentration. If a reportable release is discovered during decommissioning, Operator will report release to Colorado Parks and Wildlife in addition to COGCC, Surface Owner, and location emergency response authority.</p>
2 COAs	

### 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**

402893773	FORM 27-INITIAL-SUBMITTED
402895321	MAP

Total Attach: 2 Files

### General Comments

**User Group**

**Comment**

**Comment Date**

Environmental	Added off location flowline ID 481142 as a related facility	12/10/2021
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Total: 1 comment(s)