

State of Colorado
Energy & Carbon Management Commission

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Receive Date:
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Report taken by:
Krystal Heibel

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.

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

OPERATOR INFORMATION

Name of Operator: <u>TIMKA RESOURCES LTD</u>	Operator No: <u>88370</u>	Phone Numbers Phone: <u>(970) 590-5617</u> Mobile: <u>()</u>
Address: <u>2077 BAYFRONT DR</u>		
City: <u>WINDSOR</u>	State: <u>CO</u>	Zip: <u>80550</u>
Contact Person: <u>Todd Pivonka</u>	Email: <u>timkaresources@hotmail.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21572 Initial Form 27 Document #: 402924704

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>116366</u>	API #: _____	County Name: <u>LOGAN</u>
Facility Name: <u>BARNHART 1</u>	Latitude: <u>40.638892</u>	Longitude: <u>-103.544120</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENE</u>	Sec: <u>29</u>	Twp: <u>8N</u>	Range: <u>55W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>075-08933</u>	County Name: <u>LOGAN</u>
Facility Name: <u>BARNHART ET AL 1</u>	Latitude: <u>40.638360</u>	Longitude: <u>-103.545080</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENE</u>	Sec: <u>29</u>	Twp: <u>8N</u>	Range: <u>55W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Pasture

Is domestic water well within 1/4 mile? Yes

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

Nearest Domestic well: Approx. 800 feet NE of tank battery (permit 73342). Groundwater recorded at 62 feet bgs in 1974
Unnamed Surface Water/ Drainage Basin ~ 500 ft south of Wellhead
Not within any high priority habitats
Two freshwater ponds within 0.5 mile radius of site (west and east)
Located within Stoneham-Cushman Complex, 3 to 9 percent slopes

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	SOILS	pit	analytical samples

INITIAL ACTION SUMMARY

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

Form 27-S Document No. 403438351 was submitted on July 11, 2023 and approved on August 31, 2023. Per the conditions of approval (COAs), Timka Resources is providing this Form 27-S to detail confirmation soil sampling and investigation activities that were performed on October 25, 2023 to address the COA provided in the Form 27-S approval. Per the COA regarding laboratory analysis and a meeting held between ECMC and CGRS personnel on September 25, 2023, the laboratory data from eAnalytics will not be recognized by the ECMC for site closure as the lab is not currently NELAP accredited. Per ECMC directive, data collected previous to the October 25, 2023, sampling event is provided as field screening reference only and is not considered for delineation of E&P waste impacts or site closure. Soil samples were collected from the locations illustrated on the attached soil sample location map. The laboratory analytical report is included as an attachment and the analytical data are summarized on the attached summary tables. Based on available data including the nearest registered domestic groundwater wells, depth to groundwater at the site is greater than 60 feet bgs. In addition, a confining layer was encountered within the excavation of the produced water pit at approximately 20 feet bgs. Therefore, laboratory analytical data are compared to the Residential Soil Screening Level Concentrations. The cause for the delay in reporting between the sampling event and this Form 27-S submittal is attributed to negotiations with eAnalytics Laboratory to re-instate their NELAP certification which they did not renew in 2019 to avoid re-sampling the site. However, the negotiation attempts were unsuccessful. Additionally, Timka has been working with environmental and soil reclamation experts to prepare the attached reclamation plan for the site.

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):

Grab soil samples were collected from the former locations of the oil tanks, produced water storage tank, heater treater, well head, flowline, the earthen berms for the produced water pit, and from within the excavation of the produced water pit. The soil sample locations are illustrated on the attached soil sample location map and laboratory analytical results summarized on the attached summary tables and the laboratory analytical report is provided for reference.

Proposed Groundwater Sampling

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

Groundwater was not encountered during excavation or sampling activities. Depth to groundwater is greater than 60 feet bgs and a confining layer was encountered during excavation activities at approximately 20 feet bgs.

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 18

Number of soil samples exceeding 915-1 4

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

Approximate areal extent (square feet) 8000

NA / ND

-- Highest concentration of TPH (mg/kg) 61

-- Highest concentration of SAR 11.5

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 12

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

Highest concentration of Benzene (µg/l)

Highest concentration of Toluene (µg/l)

Highest concentration of Ethylbenzene (µg/l)

Highest concentration of Xylene (µg/l)

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?

Three background samples were collected at the locations illustrated on the attached Site Figures and submitted for laboratory analysis of the Table 915-1 soil suitability and metals analytes. Background sample Background02@1' was above the Table 915-1 standards for pH and boron with detected concentrations of 9.02 and 11.0, respectively. Two of the three background samples were above the Table 915-1 residential soil screening standards for arsenic with the third result very near the standard at a detected concentration of 0.668 mg/kg. The background concentrations for pH, boron, and arsenic indicate that those are naturally occurring at the Site.

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

Volume of solid waste (cubic yards) 3300

Volume of liquid waste (barrels) 0

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.

Approximately 3,300 cubic yards of petroleum hydrocarbon impacted soil was removed from the site for disposal at the Pawnee Waste Landfill. Confirmation re-sampling per the COAs provided on the August 31, 2023 Form 27-S approval was performed on October 25, 2023 and the results confirmed that organic petroleum hydrocarbon impacts were successfully mitigated through excavation and disposal remediation methods. Remaining soil impacted by SAR is located within the northern and western earthen berms for the produced water pit and in surface soil at the former location of the produced water storage tank. SAR will be remediated per the attached proposed reclamation plan.

REMEDIATION 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.

Petroleum hydrocarbon impacted soil in the produced water pit was removed for disposal and a confining layer was encountered at 20 feet bgs. Soil samples from the excavation extents demonstrate that all petroleum hydrocarbon impacted soil has been removed. Remaining soil impacted by SAR is located within the northern and western earthen berms for the produced water pit and in surface soil at the former location of the produced water storage tank. SAR will be remediated per the attached proposed reclamation plan.

Soil Remediation Summary

In Situ

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

Ex Situ

Yes _____ Excavate and offsite disposal
If Yes: Estimated Volume (Cubic Yards) _____ 3300
Name of Licensed Disposal Facility or COGCC Facility ID # _____
Yes _____ Excavate and onsite remediation
No _____ Land Treatment
No _____ Bioremediation (or enhanced bioremediation)
No _____ Chemical oxidation
Yes _____ Other Earthen berm material will be mixed with
gypsum and buried within the open
excavation.

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.

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

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.

A reclamation plan was submitted with the approved Form 27-S Document No. 403438351. However, per the COAs provided, a re-sampling effort was required to confirm previous analytical results from a laboratory that was not currently NELAP accredited. Additionally, the COAs included the statement that "any soil that is impacted and exceeds the thresholds in Table 915-1 cannot be buried. Proper disposal of oil waste must be treated or disposed of in accordance with Rule 905.e." Based on the previous laboratory analytical data, while not recognized by ECMC, and the data from the October 25, 2023 sampling event, the remaining soil is impacted above the Table 915-1 residential soil screening levels for SAR. This confirms that the remaining soil is not impacted by oily or petroleum hydrocarbon E&P waste. Further, the laboratory analytical results indicate that all petroleum hydrocarbon impacted soil including oily compounds have been mitigated through excavation and disposal activities. The attached reclamation plan details remediation of SAR impacted soil on-site through mixing and capping the soil with agricultural grade gypsum, burying the soil within the excavation and on top of a confining layer at 20' bgs to approximately 18' bgs which is sufficiently below the local and proposed vegetative root zone. The excavation would then be backfilled and compacted with structural fill material to within 3' bgs of the surface and topsoil would be placed to the surface for reseeding and reclamation activities. A detailed reclamation plan including justification for the proposed reclamation activities and an evaluation of other remediation methods is attached to this document.

Is the described reclamation complete? No _____

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. 04/01/2024

Proposed date of completion of Reclamation. 11/01/2026

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). 07/13/2022

Proposed site investigation commencement. 07/13/2022

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/13/2022

Proposed date of completion of Remediation. 05/23/2023

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

Form 27-S Document No. 403438351 was submitted on July 11, 2023 and approved on August 31, 2023. Per the conditions of approval (COAs), Timka Resources is providing this Form 27-S to detail confirmation soil sampling and investigation activities that were performed on October 25, 2023 to address the COA provided in the Form 27-S approval. Per the COA regarding laboratory analysis and a meeting held between ECMC and CGRS personnel on September 25, 2023, the laboratory data from eAnalytics will not be recognized by the ECMC for site closure as the lab is not currently NELAP accredited. Per ECMC directive, data collected previous to the October 25, 2023, sampling event is provided as field screening reference only and is not considered for delineation of E&P waste impacts or site closure. Soil samples were collected from the locations illustrated on the attached soil sample location map. The laboratory analytical report is included as an attachment and the analytical data are summarized on the attached summary tables. Based on available data including the nearest registered domestic groundwater wells, depth to groundwater at the site is greater than 60 feet bgs. In addition, a confining layer was encountered within the excavation of the produced water pit at approximately 20 feet bgs. Therefore, laboratory analytical data are compared to the Residential Soil Screening Level Concentrations. The cause for the delay in reporting between the sampling event and this Form 27-S submittal is attributed to negotiations with eAnalytics Laboratory to re-instate their NELAP certification which they did not renew in 2019 to avoid re-sampling the site. However, the negotiation attempts were unsuccessful. Additionally, Timka has been diligently working with environmental and soil reclamation experts to evaluate the site and multiple SAR remediation and reclamation methods. Based on agriculture industry standards and best practices and in the interest of protection of human health and the environment, the attached site-specific reclamation plan has been prepared for submittal to the ECMC for consideration.

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

Signed: Todd Pivonka

Title: Agent

Submit Date: 12/22/2023

Email: timkaresources@hotmail.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: Krystal Heibel

Date: 02/29/2024

Remediation Project Number: 21572

COA Type

Description

	Operator shall check the box for "Rule 913.c.(1): Pit or Cuttings Trench closure." within the next submittal.
	Operators will collect and submit for laboratory analysis a soil sample collected from the areas most likely to have been impacted during the operational life of the flowline. These areas include, but are not limited to: where Flowlines connect to the wellhead, surface equipment, risers, valves, or manifolds; where Flowlines bend or were repaired in the past and at joints and hammer unions; where Flowlines connect to Flowlines or equipment of different material; and where Flowlines crossed drainages or surface water or are in contact with shallow groundwater.
	Operator shall clarify which NELAC-accredited soil sample's analytical results are the replacement for the field screened sample of "**SS PWP Bottom"? This sample contained 8,500 mg/kg TPH and 3.79 mg/kg for Naphthalene.
	Analytical data indicates arsenic at soil sample "SSE @ 12" onsite exceed Table 915-1 Residential Soil Screening Level Concentrations and are greater than 1.25 times the concentration in the background sample(s) with the highest respective concentration. Operator will continue to analyze confirmation soil samples for arsenic.
	If the Operator proposes to leave material with elevated levels of pH, EC and SAR in situ, the Operator shall define the vertical and lateral extent of impacts and provide a detailed Reclamation plan that includes, but is not limited to, soil analysis from adjacent undisturbed lands, revegetation techniques, site stabilization, and details of seeded species. Operator will submit the Reclamation plan pursuant to Rule 915.b. on a Form 27 Supplemental Report for Director review. Please note that boron can not be left in situ, so a different remediation method must be taken. Also, the reclamation specialist cannot look at the reclamation plan until all inorganics (EC, SAR, and pH only) are fully laterally and vertically delineated.
5 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.

<u>Att Doc Num</u>	<u>Name</u>
403549465	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403634112	RECLAMATION PLAN
403634123	ANALYTICAL RESULTS
403634125	SOIL SAMPLE LOCATION MAP
403634129	ANALYTICAL RESULTS
403703896	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	ECMC approves Operator's request for use of Residential SSLs based on the depth to groundwater and the local lithology suggesting a pathway to groundwater at this location is not likely.	02/29/2024

Total: 1 comment(s)