

State of Colorado  
Energy & Carbon Management Commission

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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 ECMC 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: KP KAUFFMAN COMPANY INC	Operator No: 46290	Phone Numbers
Address: 1700 LINCOLN ST STE 4550		Phone: (303) 4254822
City: DENVER	State: CO	Zip: 80203
Contact Person: John Peterson	Email: jpeterson@kpk.com	Mobile: (303) 550-8872

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 20118 Initial Form 27 Document #: 402786096

## 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

No Multiple Facilities

Facility Type: WELL	Facility ID: _____	API #: 001-09423	County Name: ADAMS
Facility Name: MCELWAIN 32-17	Latitude: 39.965278	Longitude: -104.912500	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNE	Sec: 17	Twp: 1S	Range: 6W Meridian: 6 Sensitive Area? Yes

## SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Ag.

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? Yes

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

Currently, the site is being developed for single family homes. No habitable structures are located within 1/4 mile of the site; The roadway of Colorado E470 is approximately 700 feet south of the site; SURFACE WATER: Todd Creek, a tributary to Smith Reservoir, is located approximately 975 feet north of the site. Todd Creek is a USFWS-mapped wetland: freshwater emergent wetland (PEM1C). The 100 year floodplain is north-northwest approximately 975 feet of the site; High Priority habitat is approximately 470 feet to the north and northwest; an Aquatic Native Species Management Waters buffer is approximately 470 feet north of the site; a Bald Eagle Roost site is 4,400' to the northwest; a Bald Eagle Active Nest site half mile buffer is 2,605 feet to the north. CPW has stated that site activities can continue without oversight because the nest are currently abandoned. There is 1 domestic water well within a quarter mile of the well.

## 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
UNDETERMINED	SOILS	TBD	Soil Screening, Soil samples, Lab results

### INITIAL ACTION SUMMARY

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

This form is being prepared for facility removal/closure. Confirmation samples around the wellhead, separator, production tank, and produced water vault will be collected. Confirmation soil samples will be collected as described in the Rule 915.e.(2) Guidance Document and will be analyzed for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble).

### 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 ):

Confirmation samples around the wellhead, separator, production tank, and produced water vault will be collected . If field screening efforts indicate no impacts present Operator will analyze soil samples for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene., total petroleum hydrocarbons (TPH) - GRO: C6-C10, TPH - DRO: C10-C28, and ORO: C28-C40, and Table 915-1 Soil Suitability for Reclamation (pH, specific conductance (EC) and sodium adsorption ratio (SAR) by saturated paste method, and boron by hot water soluble soil extract method. If field screening efforts indicate the presence of soil impacts from organics or inorganics, Operator shall analyze soil samples for TPH (C6-C36), Table 915-1, Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation EC, SAR, pH, and boron (hot water soluble). If needed, background samples may be collected and analyzed for Table 915-1 metals and Table 915-1 Soil Suitability for Reclamation.

#### Proposed Groundwater Sampling

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

#### 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 ):

In addition to the proposed soil sampling locations Operator shall collect soil samples for laboratory analysis of Table 915-1 constituents to confirm the presence or absence of impacts adjacent to the flowline in the following locations:

- where the flowline changes course (bends);
- where the flowline was repaired in the past and/or at joints and hammer unions;
- where the flowline connects to other flowlines or equipment of different material; and
- where the flowline crosses drainages or surface water or are in contact with shallow groundwater.

## SITE INVESTIGATION REPORT

## **SAMPLE SUMMARY**

### **Soil**

Number of soil samples collected 15  
Number of soil samples exceeding 915-1 10  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 0

### **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         

### **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.

### **NA / ND**

ND Highest concentration of TPH (mg/kg)           
         Highest concentration of SAR           
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 0  
         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)         

## **OTHER INVESTIGATION INFORMATION**

☐ Were impacts to adjacent property or offsite impacts identified?

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

Four background soil borings were installed outside of the facility's footprint at depths of 4 to 8-feet below site grades. No visual signs of hydrocarbon impacts were observed. The samples were submitted for Table 915-1 inorganics to compare background levels with the inorganics collected at the wellhead, flowline, separator, and production/produced water vaults. KPK proposed site-specific soil cleanup concentrations based on the results from the background samples.

☐ 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.

No organic release was detected however, elevated concentrations of Arsenic and SAR were observed in samples the SS-5 and SS-2 locations. KPK recommends excavation the soil at these locations.

## **REMEDATION 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.

Hydrocarbon impacts were not observed during field screening events and confirmation sample results. These results are summarized in the attached Tables 1 and 4. However, inorganics were observed to exceed Table 915-1 within and outside of KPK's operations for arsenic, barium selenium, SAR, EC and pH arsenic (Table 2 and 3). The background samples were generally observed at higher concentrations for inorganics than the samples collected within the former operation area. This is indicative of the naturally occurring inorganics in the soils. Based on this information, KPK utilized site-specific background concentrations for the inorganic constituents by multiplying the highest concentrations observed in the background samples by 1.25. The proposed site-specific background concentrations are shown in the attached Table 2. As shown, the inorganics were observed to exceed arsenic at the SS-5 location and SAR at the SS-2 location.

Currently the site is being developed for residential housing. Based on the developer's land use map this specific parcel will be utilized as open space see Figures 3 and 4.

KPK intends to excavate the soil within the SS-5 and SS-2 locations. Soil samples will be collected and analyzed for inorganics in accordance with Table 915-1. The soil will be transported to a licensed facility and disposed in accordance with all State and Federal guidelines. Copies of the manifests will be provided on the subsequent Form 27. Once it is confirmed that the elevated arsenic and SAR are below the proposed site-specific background concentrations, KPK will follow up with an supplemental Form 27 requesting NFA status for this facility.

## 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) \_\_\_\_\_ 20

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

\_\_\_\_\_ 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.

Not applicable

## 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

### Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

KPK has sufficient insurance and bonding to fully address the anticipated costs of Remediation, including the remaining estimated costs for this project. KPK has general liability insurance and financial assurance in compliance with COGCC rules. The cost for remediation is a preliminary estimate only, costs may change upwards or downward based on site-specific information. KPK makes no representation or guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 10000

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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

Volume of E&P Waste (solid) in cubic yards 0

E&P waste (solid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

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

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

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

If YES:

☐ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards?

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the ECMC 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.

Reclamation activities were not performed as the site is now under development for single family homes and no agriculture activity will exist.

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 provide the seed mix? No \_\_\_\_\_

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

Did the local soil conservation district provide the seed mix? No \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 03/13/2023

Proposed date of completion of Reclamation. 04/13/2023

## 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. 08/19/2021

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

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/01/2021

Proposed site investigation commencement. 01/30/2023

Proposed completion of site investigation. 02/27/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/27/2023

Proposed date of completion of Remediation. 03/10/2024

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:

The site is currently under development and the developers land use map indicates that this parcel will be utilized as open space. Operator has collected confirmation samples and conducted field screening at the site to confirm there are no hydrocarbon impacts to soil. However, elevated levels of Arsenic and SAR were observed in two locations within the facility's foot-print. KPK intends to excavate the soil at these locations and resample for inorganics for confirmation purposes. Operator is updating the implementation schedule to reflect the remediation completion date.

**OPERATOR COMMENT**

KPK is requesting that the ECMC grant NFA status to this facility based on the following:

- Confirmation samples did not show hydrocarbon impacts in the soil.
- Background (inorganic) soil samples were generally observed at levels greater than the proposed site-specific soil cleanup concentrations.
- Groundwater has not been impacted.

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

Signed: Dan Motisi

Title: Environmental Geologist

Submit Date: \_\_\_\_\_

Email: dmotisi@kpk.com

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

ECMC Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 20118

**COA Type****Description**

0 COA	

**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**

403714607	ANALYTICAL RESULTS
403714609	ANALYTICAL RESULTS
403714666	LOGS
403717910	MAP
403718298	ANALYTICAL RESULTS

Total Attach: 5 Files

**General Comments****User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)