FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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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 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 INFORMATON

Name of Operator: INVESTMENT EQUIPMENT LLC Operator No: 10330
Address: 558 CASTLE PINES PKWY UNIT B-4
City: CASTLE PINES State: CO Zip: 80108
Contact Person: Jim Chisolm Email: Investmentequipment@gmail.com

Phone Numbers
Phone: (405) 642-9437
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 18894 Initial Form 27 Document #: 402646539

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.
- [X] 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: PIT Facility ID: 117586 API #: County Name: WASHINGTON
Facility Name: COLORADO STATE 1 & 2 Latitude: 39.751264 Longitude: -103.272980
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SWNW Sec: 36 Twp: 3S Range: 53W Meridian: 6 Sensitive Area? Yes

Facility Type: PIT Facility ID: 117587 API #: County Name: WASHINGTON
Facility Name: COLORADO "A" 1 Latitude: 39.750951 Longitude: -103.272409
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NESW Sec: 36 Twp: 3S Range: 53W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION Facility ID: 470686 API #: County Name: WASHINGTON

Facility Name: Colorado State Latitude: 39.751120 Longitude: -103.273620

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: SWNW Sec: 36 Twp: 3S Range: 53W Meridian: 6 Sensitive Area? No

Facility Type: OFF-LOCATION FLOWLINE Facility ID: 470717 API #: County Name: WASHINGTON

Facility Name: Production Line Latitude: 39.751120 Longitude: -103.273620

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: SWNW Sec: 36 Twp: 3S Range: 53W Meridian: 6 Sensitive Area? Yes

Facility Type: OFF-LOCATION FLOWLINE Facility ID: 470718 API #: County Name: WASHINGTON

Facility Name: Production Line Latitude: 39.751120 Longitude: -103.273620

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: SWNW Sec: 36 Twp: 3S Range: 53W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use Cropland

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

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- ☐ **E&P Waste**
  - ☐ Produced Water
  - ☐ Oil
  - ☐ Condensate
  - ☐ Drilling Fluids
  - ☐ Drill Cuttings
- ☐ **Other E&P Waste**
  - ☐ Workover Fluids
  - ☐ Tank Bottoms
  - ☐ Pigging Waste
  - ☐ Rig Wash
  - ☐ Spent Filters
  - ☐ Pit Bottoms
  - ☐ Other (as described by EPA) _____
- ☒ **Non-E&P Waste**

No waste is currently anticipated

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	N/A	Laboratory analysis, if encountered
UNDETERMINED	SOILS	Unknown	Laboratory analysis

INITIAL ACTION SUMMARY

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

Boron sampling performed 4/4/2024 revealed that seven of the eight samples collected below the berms remained below the ECMC Boron standard of 2mg/l and the one sample that exceeded the standard was collected at the EPSS location at a depth of 4' bgs. The EPSS sample collected at 6' bgs exhibited concentrations below the standard.

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):

Based on sample results, excavation of sodic soils to place in the treatment area would include all berm soils and soils below berms to a depth of 6' bgs where Soil Suitability results remain below standards. Once the treatment area is established, quarterly sampling for pH, EC, Boron, and SAR will continue to identify any Boron exceedance within the treatment area.

Proposed Groundwater Sampling

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

If groundwater is encountered during the site assessment, a grab groundwater sample will be collected and analyzed for all organic compounds per ECMC Table 915-1.

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: 62

Number of soil samples exceeeding 915-1: 12

NA / ND

ND Highest concentration of TPH (mg/kg): _____

_____ Highest concentration of SAR: _____

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 No

Approximate areal extent (square feet) 100

Vertical Extent > 915-1 (in feet) 22

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

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA Highest concentration of Xylene (µg/l)

NA 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?

5 Background samples were taken for metals (BM1, BM2, BM3, BM4, BM5). Previously, two Background samples (Background North, and Background South).

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

Volume of solid waste (cubic yards) 647

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? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Pit excavation of hydrocarbon impacted soil was removed and disposed of a Pawnee Waste facility. ~107 cu yds of soil was removed and disposed of, waste manifest attached in remedial report summary. See attached Remedial Action Plan for additional details.

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.

Based on sample results, excavation of sodic soils to place in the treatment area would include all berm soils and soils below berms to a depth of 6' bgs where Soil Suitability results remain below standards. Once the treatment area is established, quarterly sampling for pH, EC, Boron, and SAR will continue to identify any Boron exceedance within the treatment area. Approximately 12,000 cubic yards including all berm soils and the soils within 6' bgs of the berms will be excavated and stockpiled. The Pit areas will be regraded to match surrounding area topography to create a level working surface. Sodic soils will be spread across 4 acres of the approximately 5 acre location at a depth of 2'. On a quarterly basis Soil Suitability for Reclamation sampling will be performed in a grid pattern across the treatment area and results will be provided to the ECMC. Sample locations will be documented using the ArcGis Collector application. Following quarterly sampling Gypsum products will be applied at the surface level and then tilled into the soils by heavy machinery. In addition, the treatment area will be monitored for control of noxious weeds, and silt fence and soil berms will be established to prevent run off. Following completion of Sodic treatment, the area will be regraded for farming activities and Soil Suitability for Reclamation sampling will be performed to confirm that impacts are no longer present. Remedial activities are estimated to be complete by August 1, 2025 upon completion of quarterly Soil Suitability sampling. Reclamation of surface is estimated to begin Fall 2025.

Soil Remediation Summary

☐ **In Situ**

☒ **Ex Situ**

Bioremediation (or enhanced bioremediation)

Yes Excavate and offsite disposal

Chemical oxidation

Air sparge / Soil vapor extraction

Natural Attenuation

Other

If Yes: Estimated Volume (Cubic Yards) 107

Name of Licensed Disposal Facility or ECMC 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.

N/A

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] Quarterly [ ] Semi-Annually [ ] Annually [ ] Other Site Assessment Report Update

[ ] **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

[X] Other Assessment/Remediation update

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.

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

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

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

Contaminated Soil was disposed of at Pawnee Waste Facility

Volume of E&P Waste (solid) in cubic yards 647

E&P waste (solid) description contaminated soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Pawnee Waste

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.

Investment Equipment is working directly with the Colorado State Land Board to develop a Reclamation Plan to bury the remaining inorganic impacts in the existing pits below root zone. On a quarterly basis Soil Suitability for Reclamation sampling will be performed in a grid pattern across the treatment area and results will be provided to the ECMC. Sample locations will be documented using the ArcGis Collector application. Following quarterly sampling, Gypsum products will be applied at the surface level and then tilled into the soils by heavy machinery. In addition, the treatment area will be monitored for control of noxious weeds, and silt fence and soil berms will be established to prevent run off. Following completion of Sodic treatment, the area will be regraded for farming activities and Soil Suitability for Reclamation sampling will be performed to confirm that impacts are no longer present.

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. 09/01/2025

Proposed date of completion of Reclamation. 12/01/2025

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). 08/02/2021

Proposed site investigation commencement. 08/02/2021

Proposed completion of site investigation. 09/01/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/01/2023

Proposed date of completion of Remediation. 09/01/2025

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

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

Signed: Amber Barnett Title: Compliance Specialist

Submit Date: 05/08/2024 Email: abarnett@ardorenvironmental.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: Krystal Heibel Date: 05/30/2024

Remediation Project Number: 18894

COA Type	Description
	Form 27 (Doc# 403623859; received Dec 21, 2023; approved March 8, 2024) includes the Pit 117586, Pit 117587, Location 470686, Off-location flowline 470717, Off-location flowline 470718. BUT it does not include the spill 472607. Operator shall add the Spill 472607 to the next Form 27 submittal for remediation project 18894. Once the Form 27 is approved, Operator shall request closure of remediation project #16226, using the Remediation Completion Report tab on the form.
	Per Doc# 403623859, Operator shall fully populate the implementation schedule in accordance with Rule 913.d on the subsequent Supplemental Form 27. The "Date of Surface Owner notification/consultation, if required." and "Actual Spill or Release date or date of discovery." information is missing.
2 COAs	

ATTACHMENT 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
403779980	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403780765	SITE INVESTIGATION REPORT
403807804	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group	Comment	Comment Date
Environmental	Rem# 16226 - associated with closing the COLORADO "A" 1 pit and the other pit Rem# 18894 - associated with "Colorado State" location, off-location flowlines, on location flowline(s), tank battery, and location. Spill ID# 472607 proceeded under Remediation# 16226 within Form 19S, Doc# 402577885 Per Doc# 403196653, "two remediation projects are open for Pit closure/decommissioning (pits 117586 and 117587). Operator shall request closure for Remediation Project 16226 and state work is proceeding under Remediation Project 18894. As such, Operator shall address Spill 472607 under Remediation Project 18894 and add the spill to the site information section. The site information section on the subsequent Form 27 Supplemental for Remediation Project number 18894 must include the following: -Spill 472607 -Pit 117586 -Pit 117587 -Location 470686 -Off-location flowline 470717 (request administrative closure and reference remediation project associated with flowline removal) -Off-location flowline 470718 (request administrative closure and reference remediation project associated with flowline removal)"	05/30/2024
Environmental	Per Doc# 403623859, ECMC agrees to the reduced analyte list of Table 915-1 Soil Suitability for Reclamation analytes: pH, EC, Boron, and SAR for remediation of the pit locations.	05/30/2024
Environmental	"WPNW (West pit north wall) 12/2/2021" TPH exceedance shows to be remediated with "WPNW (West pit north wall) 4/19/2022" "WPB (West pit base) 4/19/2022" TPH exceedance shows to be remediated with "WPB @ 7 (West pit base @ 7) 7/21/2022" Please note that boron exceedances cannot be remediated with an in-situ Reclamation Plan. Reclamation Plans apply only to pH, EC, and SAR exceedances.	05/30/2024

Total: 3 comment(s)