

# Location Checklist



<b>Operator / #</b>	HIGHPOINT OPERATING CORPORATION / 10071		
<b>Location ID &amp; Name</b>	<a href="#">305177</a> ROTHE-65N63W/31NWSW		
<b>County</b>	WELD, CO		
<b>Well Information</b>	Well Name:	ROTHE #13-31	
	Well API #:	<a href="#">05-123-22601</a>	
	Lat/Long as Drilled:	40.353847 / -104.485943	
	Plug Date & Form 6s Doc #:	12/16/2021 (Cut & Cap) & <a href="#">402901465</a>	
<b>Facility Entities</b>	<input checked="" type="checkbox"/>	Tank Battery (Off-Site)	Pits
	<input checked="" type="checkbox"/>	Wells	<input checked="" type="checkbox"/> On-Location Flowlines (Form 42) Doc #: <a href="#">402872800</a>
		Domestic Taps	<input checked="" type="checkbox"/> Off-Location Flowlines (Form 44) Doc #: <a href="#">402913529</a>
<b>Equipment On-Site</b>	<input checked="" type="checkbox"/>	None	Debris
		Pit mouse/rat holes, cellars backfilled	
<b>Access Road</b>	<input checked="" type="checkbox"/>	Regraded	<input checked="" type="checkbox"/> Contoured
		Culverts removed	<input checked="" type="checkbox"/> Gravel removed
		Pre-Existing (Must provide supporting documentation)	
<b>Reclamation Status</b>	<input checked="" type="checkbox"/>	Location and associated disturbances reclaimed	
		Subsidence	
<b>Spills or Releases (Form 19)</b>	<input checked="" type="checkbox"/>	No	<input type="checkbox"/> Yes
<b>Remediation (Form 27/27A)</b>		No	<input checked="" type="checkbox"/> Yes – Resolved 2022
<b>On-Location Flowlines</b>		No	<input checked="" type="checkbox"/> Yes
<b>Off-Location Flowlines</b>		No	<input checked="" type="checkbox"/> Yes
<b>Inspection Corrective Actions</b>		No	<input checked="" type="checkbox"/> Yes – Resolved 2019
<b>Sundry Notice</b>	Form 4 Doc # & Date:	<a href="#">403003106</a> & 05/05/2022	
	Purpose:	Final Reclamation will commence approximately 04/01/2022.	
	Comments:	Well is on crop ground, Location prepped and ready for farmer 04/01/2022.	
	Attachments:	None	
<b>Drone Information</b>	Make & Model	DJI M300/DJI Mavic 3 Multispectral	
	Image Processing Software	Pix4dfields – RGB/Multispectral Imagery & Pix4dmatic – RGB Imagery	
	Pilot Name & FAA Certificate #	Sam Streater, #4100157	
	Date of FAA Certificate Issuance	23 Dec 2023	

**SITE-SPECIFIC QUALITY ASSURANCE  
& QUALITY CONTROL AUDIT**



**Final Reclamation Complete Notice – Cropland**

**PERMIT CLOSURE REPORT – CROPLAND**

**Location ID** 305177

**Location Name** ROTHE-65N63W/31NWSW

**Report Date**

5 Feb 2024

Soil Sage has conducted a thorough data audit as part of our Quality Assurance and Quality Control (QA/QC) protocols. T

**Crop Year and Type**

Crop 2023 – Grass-Hay

Crop 2022 – Grass-Hay

**Quality Assurance & Quality Control Audit**

<b>Auditor</b>	Soil Sage
<b>Audit Date</b>	24 Jan 2024

**Audit Methodology**

The following source materials were consulted during the QA and QC audit process:

- ✓ Site Permit Closures provided by CIVITAS Resources
- ✓ Colorado Oil & Gas Information System – COGIS Database
- ✓ On-site Evaluation and Proprietary Soil Sage Drone Imagery data collection
- ✓ Review of legacy imagery for site location and facility parameters

All pertinent data, imagery, and materials are included at the end of this report.

## Site Description

<b>Name</b>	ROTHE-65N63W/31NWSW		
<b>Location ID</b>	<a href="#">305177</a>		
<b>Operator / #</b>	HIGHPOINT OPERATING CORPORATION / 10071		
<b>Field</b>	WATTENBERG / 90750		
<b>County, State</b>	WELD, CO		
<b>Lat/Long</b>	40.353847 / -104.485943		
	Planned Location	X	As Drilled
<b>Facility Status</b>	CL	<b>Location</b>	NWSW 31 5N63W
<b>Facility Status Date</b>	12/16/2021		
<b>Facility Entities</b>	X	Tank Battery (Off-Site)	Pits
	X	Wells	X Off-Location Flowlines ( <b>Form 44</b> )
		Domestic Taps	X On-Location Flowlines ( <b>Form 42</b> )
		Electric Utilities	
<b>Equipment on Site</b>	X	No	Yes
		If yes, list:	
		Pit mouse/rat holes, cellars backfilled	
<b>Access Road</b>	X	Regraded	X Contoured
		Culverts Removed	X Gravel Removed
		Pre-Existing: must provide supporting documentation	
<b>Environment Incidents &amp; Remediation</b>	X	None	Spill or Release ( <b>Form 19</b> )
		Remediation ( <b>Form 27/27A</b> )	
<b>Variance Requests</b>	<b>No Variance Requests were detected during this QA &amp; QC Audit.</b>		
<b>Inspection Corrective Actions (CA)s</b>	<p><b>Corrective Actions (CA)s were detected during the QA &amp; QC Audit.</b></p> <p><b>CA Overall Status:</b> 1 of 1 Completed</p> <p><b>CA-Approving Inspection Doc # &amp; Date:</b> <a href="#">696101698</a> &amp; 12/12/2019</p> <ul style="list-style-type: none"> <li>○ <b>Inspector:</b> Bret Evins</li> </ul> <p><b>Form FIRR Doc # &amp; Submittal Date:</b> <a href="#">402183176</a> &amp; 09/04/2019</p> <ul style="list-style-type: none"> <li>○ <b>Overall Status:</b> CAC</li> <li>○ <b>Originating Field Inspection Report (FIR) Doc #:</b> <a href="#">696101255</a></li> <li>○ <b>CA#:</b> 130040 <b>Date Completed:</b> 09/13/2019</li> </ul> <p>Weed removal and control has been completed to comply with Rule 603.f.</p> <p><b>ECMC Decision:</b> Approved. Field Inspection Report doc #<a href="#">696101698</a></p>		

	<p>dated 12/12/2019 confirms that weeds have been mitigated at wellsite. Corrective Action appears addressed.</p> <p><b>Complete ECMC Inspection Search Results:</b> <a href="#">Link</a></p>
<b>Sundry Notice (Form 4)</b>	<b>Form 4s were detected during the QA &amp; QC Audit.</b> See individual scout card data for details.
<b>On Location Flowlines (Form 42)</b>	<b>Form 42s were detected during the QA &amp; QC Audit.</b> See individual scout card data for details.
<b>Off-Location Flowlines (Form 44)</b>	<p><b>Form 44 Doc # &amp; Date:</b> <a href="#">402913529</a> &amp; 04/21/2022</p> <ul style="list-style-type: none"> <li>○ <b>Purpose:</b> Off-Location Flowline Abandonment Verification</li> <li>○ <b>Abandonment Date:</b> 12/07/2021</li> <li>○ <b>ECMC Approval Date &amp; Signee:</b> 04/21/2022 by Julie Murphy</li> <li>○ <b>Operator Comments:</b> Flowline abandoned in place in compliance with rule 1105.e. requirements Line identifier: Rothe_5N-63W-31_NWSW_05056331bc_05046331cc_01M.</li> <li>○ <b>Note:</b> This Form 44 contains data for three Off-Location Flowlines. Below is the information for the Off-Location Flowline associated with this location.</li> </ul> <p><b>Flowline Facility Information</b></p> <ul style="list-style-type: none"> <li>○ <b>ECMC Flowline ID:</b> <a href="#">476906</a></li> <li>○ <b>Operator Flowline ID:</b> Rothe_5N-63W 31_NWSW_05056331bc_05046331cc_01M</li> <li>○ <b>Status &amp; Date:</b> AC &amp; 04/21/2022</li> <li>○ <b>Flowline Type:</b> Wellhead Line</li> <li>○ <b>Type of Fluids Transported:</b> Multiphase</li> <li>○ <b>Start Point Location ID:</b> <a href="#">305177</a></li> <li>○ <b>Start Point Riser Lat/Long:</b> 40.353870 / -104.485965 (ROTHER #13-31 well)</li> <li>○ <b>Equipment at Start Point:</b> Well</li> <li>○ <b>End Point Location ID:</b> <a href="#">463359</a></li> <li>○ <b>End Point Riser Lat/Long:</b> 40.350650 / -104.487516 (Rothe Production Facilities)</li> <li>○ <b>Equipment at End Point Riser:</b> Separator</li> </ul>
<b>Site Investigation and Remediation Workplan (Form 27/27A)</b>	<p><b>Remediation Project #:</b> <a href="#">20398</a></p> <p><b>Form 27A Supplemental Docs # &amp; Date:</b> <a href="#">403104898</a> &amp; 07/14/2022</p> <ul style="list-style-type: none"> <li>○ <b>Purpose:</b> Decommissioning of oil and gas facilities, wellhead cut/cap</li> </ul>

	<p>and off-location flowline abandonment</p> <ul style="list-style-type: none"> <li>○ <b>Lat/Long of Remediation:</b> 40.353847 / -104.485943</li> <li>○ <b>Operator Comments:</b> None</li> <li>○ <b>ECMC Comments:</b> Based on the information presented no further remedial action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required. The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.</li> <li>○ <b>Attachments:</b> OTHER Doc #<a href="#">403104911</a></li> <li>○ <b>ECMC COAs:</b> None</li> <li>○ <b>Closure Request Approved:</b> 07/14/2022 by Bob Chesson</li> <li>○ <b>Final Resolution:</b> <b>Case Resolved on 07/14/2022</b></li> </ul> <p><b>Form 27 Initial Doc# &amp; Date:</b> <a href="#">402758299</a> &amp; 10/12/2021</p> <ul style="list-style-type: none"> <li>○ <b>Purpose:</b> Decommissioning of oil and gas facilities, wellhead cut/cap and off-location flowline abandonment</li> <li>○ <b>Operator Comments:</b> This Form 27 Intent is submitted prior to decommissioning multiple related assets: - Cut/cap of the Rothe 13-31 wellhead (API: <a href="#">05-123-22601</a>) - Abandonment in place of wellhead off-location flowline Rothe_5N-63W-31_NWSW_05056331bc_05046331cc_01M (<a href="#">476906</a>). See attached Site Map for details.</li> <li>○ <b>Attachments:</b> Site Map Doc #<a href="#">402829604</a></li> </ul>
<p><b>Field Inspection Form (Form INSP)</b></p>	<p><b>Form INSP Doc # &amp; Date:</b> <a href="#">696101698</a> &amp; 12/12/2019</p> <ul style="list-style-type: none"> <li>○ <b>Status Summary:</b> This is a Follow Up Inspection</li> <li>○ <b>Inspected Facilities:</b> Well Rothe 13-31</li> <li>○ <b>Inspection Status:</b> SI</li> <li>○ <b>Inspection Date &amp; Inspector:</b> 12/12/2019 by Bret Evins</li> <li>○ <b>Comments:</b> I observed: Well(s): 1: Shut-In   SI. Battery: Shut-down   Inactive. Centralized Battery serves 3 Location IDs (<a href="#">323124</a>, <a href="#">305177</a>, <a href="#">306070</a>). (3: wells ; 2: Shut-In   SI ; 1: Temporarily Abandoned   TA). Refer to Field Inspection doc. #<a href="#">696101253</a> and/or Location ID</li> </ul>

	<p>#<a href="#">323124</a> for Battery / Facility, Equipment info. Follow-up to Field Inspection Report doc. #<a href="#">696101255</a> dated 09/03/2019. During this inspection, the following prior possible compliance issues appear to be addressed: 1.) Weed encroachment at wellsite. Refer to Rule 603.f for guidance. Remove, manage, &amp; control weeds around wellsite. Comply with Rule 603.f. Corrective Action date: 09/16/2019. * Weeds NOW appear mitigated at wellsite. See photos #1, 2. During this inspection, NO New/Current possible compliance issues were observed.</p> <ul style="list-style-type: none"> <li>○ <b>Attachments:</b> Inspection Photos Doc #<a href="#">696101699</a></li> </ul> <p><b>Form INSP Doc # &amp; Date:</b> <a href="#">696101255</a> &amp; 09/11/2019</p> <ul style="list-style-type: none"> <li>○ <b>Status Summary:</b> Corrective Action Response Requested</li> <li>○ <b>Inspected Facilities:</b> Well Rothe 13-31</li> <li>○ <b>Inspection Status:</b> SI</li> <li>○ <b>Inspection Date &amp; Inspector:</b> 09/03/2019 by Bret Evins</li> <li>○ <b>Comments:</b> I observed: Well(s) - 1: Shut-In   SI. Battery: Shut-down   Inactive Centralized Battery serves 3 Location IDs (<a href="#">323124</a>, <a href="#">305177</a>, <a href="#">306070</a>). Refer to Field Inspection Doc. #<a href="#">696101253</a> and/or Location ID #<a href="#">323124</a> for Battery / Facility, Equipment info. 1: Corrective Actions observed. 1.) Weed encroachment at wellsite. Refer to Rule 603.f for guidance. Remove, manage, &amp; control weeds around wellsite. Comply with Rule 603.f. Corrective Action date: 09/16/2019. See photo #1. A follow up on this site inspection will be conducted to ensure the compliance issues have been corrected to comply with COGCC rules</li> <li>○ <b>Corrective Actions:</b> Weed encroachment at wellsite. Refer to Rule 603.f for guidance. Remove, manage, &amp; control weeds around wellsite. Comply with Rule 603.f. See photo #1. Weed encroachment at wellsite. Remove, manage, &amp; control weeds around wellsite. Comply with Rule 603.f. <b>CA Date:</b> 09/16/2019</li> <li>○ <b>Attachments:</b> Inspection Photos Doc #<a href="#">696101257</a></li> </ul>
<p><b>COGIS Tank Facilities Information (Scout Card)</b></p>	<p><b>No Tank Battery documents were detected during this QA/QC Audit.</b> However, the Tank Battery is referenced in Inspection Doc #<a href="#">696101698</a> as “Centralized Battery serves 3 Location IDs (<a href="#">323124</a>, <a href="#">305177</a>, <a href="#">306070</a>). Refer to Field Inspection Doc. #<a href="#">696101253</a> and/or Location ID #<a href="#">323124</a> for Battery / Facility”</p>
<p><b>COGIS Well Information (Scout Card)</b></p>	<p><b>Well Name:</b> ROTHE #13-31</p>

	<p><b>API#:</b> <a href="#">05-123-22601</a></p> <p><b>FACILITY ID:</b> 275169</p> <ul style="list-style-type: none"> <li>○ <b>Status &amp; Date:</b> PA &amp; 12/16/2021</li> <li>○ <b>Lat/Long As Drilled:</b> 40.353847 / -104.485943</li> <li>○ <b>Form 6 Doc # &amp; Date:</b> <a href="#">402901465</a> &amp; 09/02/2022</li> <li>○ <b>Form 4 Doc # &amp; Date:</b> <a href="#">403003106</a> &amp; 05/05/2022</li> </ul> <p><b>Purpose:</b> Final Reclamation will commence approximately 04/01/2022.</p> <p><b>Comments:</b> Well is on crop ground, Location prepped and ready for farmer 04/01/2022.</p> <ul style="list-style-type: none"> <li>○ <b>Form 42 Doc # &amp; Date:</b> <a href="#">402872800</a> &amp; 11/17/2021</li> </ul> <p><b>Purpose:</b> Start of Plugging Operations – 48-hour notice required</p>
--	--

ECMC Abbreviations: [Location & Facility Status Codes](#), [Inspection Types & Statuses](#) and [ECMC Help](#).

**Audit Key Findings – Designation Land Use Observations**

PREVIOUS LAND USE	CURRENT LAND USE
<p><b>Reference Imagery for Infrastructure:</b> USDA NAIP 2011; DRCOG 2004</p>	<p><b>Remotely Sensed Imagery:</b> 22 Jun 2023</p>
<p><b>Designation:</b> Oil &amp; Gas Facility</p>	<p><b>Designation:</b> Cropland</p>

**The following imagery sources were reviewed during this audit:**

EarthExplorer, DRCOG 2002 - 2014, NAIP Imagery 2011, 2013, 2015, 2017, 2019, 2021, ESRI Maxar and Remotely Sensed Imagery Sep 2022

## Site Observation Notes

No additional information.

## Closure Information

Rothe #13-31 well (API #[05-123-22601](#)) is located in Weld County, Colorado near the intersection of County Road 61 and County Road 50. There is an Off-Location Flowline between this well and the production facilities at Location ID [463359](#).

There was a Corrective Action at this location in 2019 due to weed encroachment at the wellsite. This was resolved in 2019 and an FIR Resolution Form and a Field Inspection approved the CA in 2019.

In 2021, a Form 27 Initial was submitted for decommissioning of oil and gas facilities, wellhead cut/cap and off-location flowline abandonment, under Remediation Project #[20398](#). Remediation Project #[20398](#) was closed in a Form 27 Supplemental on July 14<sup>th</sup>, 2022.

Rothe #13-31 well (API #[05-123-22601](#)) was plugged and abandoned on December 16<sup>th</sup>, 2021. The well access road was reclaimed at this time. The related facility, Location ID [463359](#), was closed and reclaimed around the same time.

Soil Sage drone imagery confirms that no equipment was left on site at this location after reclamation activities occurred.

## Summary Acreage Table

Description	Acres
Historic Disturbance Extent	0.10
Access Road	0.02
Flowline	Not Included
Tank Battery	Off-Site (Loc ID <a href="#">463359</a> )
Well Pad	0.07

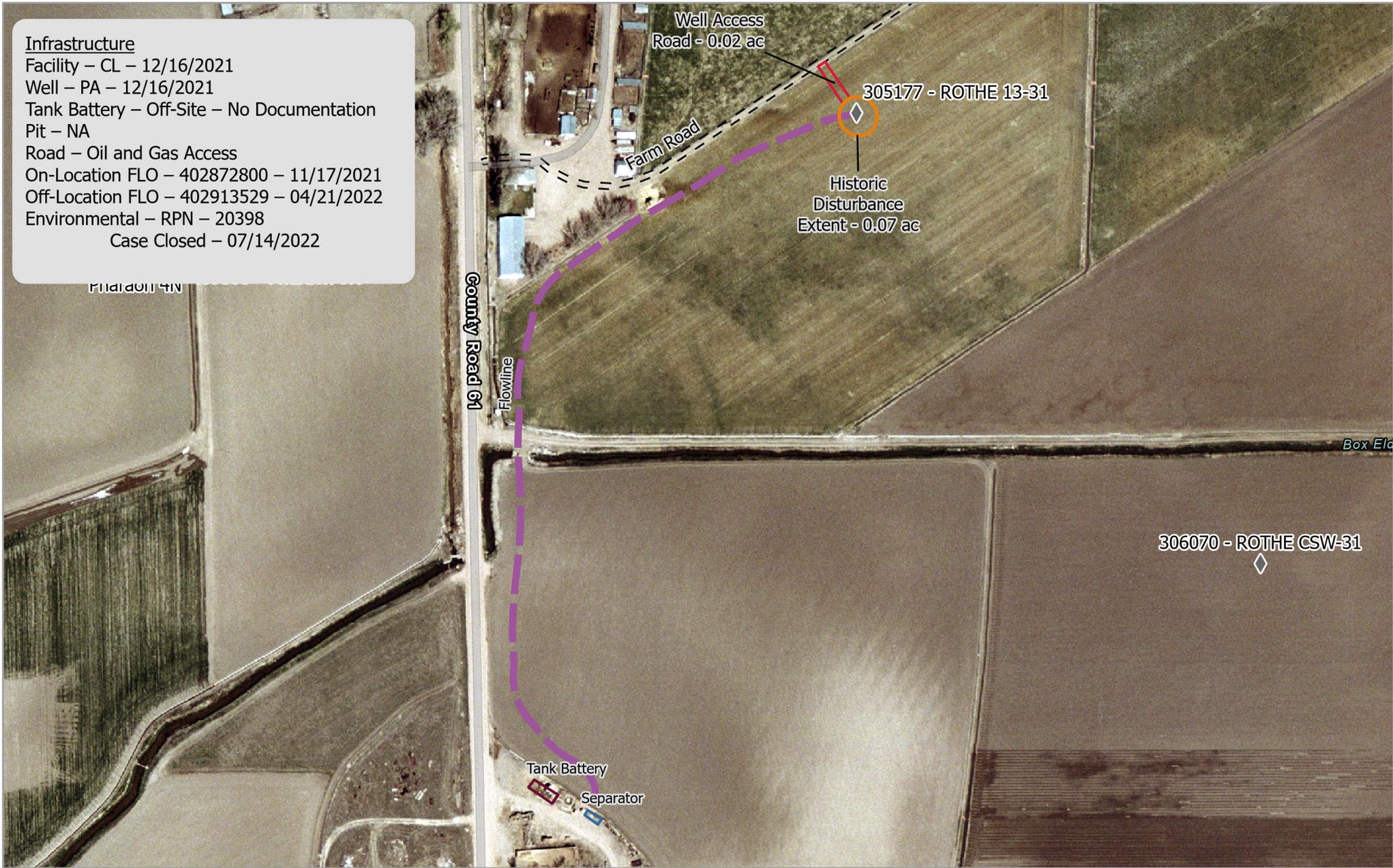
## Drone Information

Make	DJI
Model	M300/Mavic 3 Multispectral
Image Processing Software	Pix4dfields – RGB/Multispectral Imagery & Pix4dmatic – RGB Imagery
Pilot Name	Sam Streeter
Pilot FAA Certificate Number	4100157
Date of FAA Certificate Issuance	23 Dec 2023

# Pre-Infrastructure Overview

**Infrastructure**

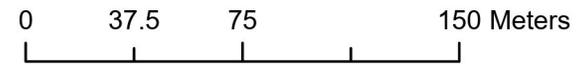
Facility – CL – 12/16/2021  
Well – PA – 12/16/2021  
Tank Battery – Off-Site – No Documentation  
Pit – NA  
Road – Oil and Gas Access  
On-Location FLO – 402872800 – 11/17/2021  
Off-Location FLO – 402913529 – 04/21/2022  
Environmental – RPN – 20398  
Case Closed – 07/14/2022



**CIV - 305177- ROTHE 13-31**  
**Map Extent - Pre-Infrastructure**  
**Overview**

Imagery: DRCOG  
Imagery Date: 13 Apr 2004  
Map Date: 05 Feb 2024  
Datum: WGS 1984 UTM Zone 13N  
POC: Soil Sage

- ◆ Wells
- Flowline
- ▭ Historic Disturbance Extent
- ▭ Road
- ▭ Tank Battery
- ▭ Separator



Disturbance Extent: 0.10 Acres  
Scale: 1:2,600

Pad Location: 40.353847  
-104.485943



Service Credits - Maxar, Microsoft, Esri, Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc. METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS



## Pre-Plugging Active Operations Location Overview

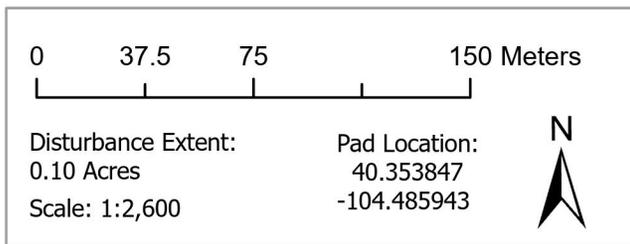
**Infrastructure**

Facility – CL – 12/16/2021  
Well – PA – 12/16/2021  
Tank Battery – Off-Site – No Documentation  
Pit – NA  
Road – Oil and Gas Access  
On-Location FLO – 402872800 – 11/17/2021  
Off-Location FLO – 402913529 – 04/21/2022  
Environmental – RPN – 20398  
Case Closed – 07/14/2022



**CIV - 305177- ROTHE 13-31**  
**Map Extent - Pre-Plugging Overview**

Imagery: USDA NAIP  
Imagery Date: 2011  
Map Date: 05 Feb 2024  
Datum: WGS 1984 UTM Zone 13N  
POC: Soil Sage



# Post-Plugging and Abandonment Location Overview

**Infrastructure**

Facility – CL – 12/16/2021  
 Well – PA – 12/16/2021  
 Tank Battery – Off-Site – No Documentation  
 Pit – NA  
 Road – Oil and Gas Access  
 On-Location FLO – 402872800 – 11/17/2021  
 Off-Location FLO – 402913529 – 04/21/2022  
 Environmental – RPN – 20398  
 Case Closed – 07/14/2022



**CIV - 305177- ROTHE 13-31**  
**Map Extent - Post-Plugging Overview**

Imagery: RS Orthomosaic, Maxar  
 Imagery Date: 22 Jun 2023, 1 Aug 2020  
 Map Date: 05 Feb 2024  
 Datum: WGS 1984 UTM Zone 13N  
 POC: Soil Sage

-  Wells
-  Remediation
-  Photo Points
-  Flowline
-  Historic Disturbance Extent
-  Road
-  Tank Battery
-  Separator



Disturbance Extent:  
 0.10 Acres  
 Scale: 1:2,600

Pad Location:  
 40.353847  
 -104.485943



Service Credits - Maxar, Microsoft, Esri  
 Community Maps Contributors, ©  
 OpenStreetMap, Microsoft, Esri, TomTom,  
 Garmin, SafeGraph, GeoTechnologies, Inc,  
 METI/NASA, USGS, EPA, NPS, US Census  
 Bureau, USDA, USFWS



# Cardinal Directional Drone Photos & Reference Area Photos

*Site Investigation and Photos Date*

31 Jan 2024

*Drone Photo Height*

350 feet

Cardinal directional photos of the site. Reference overview map.



**In View** – Well, Access Road, Flowline

**NORTH** – 40.352685 / -104.485754



**In View** – Well, Access Road, Flowline

**EAST** – 40.353890 / -104.486537



**In View** – Well, Tank Battery, Access Road, Flowline

**SOUTH** – 40.354767 / -104.485859



**In View – Well, Tank Battery, Access Road, Flowline**

**WEST – 40.353911 / -104.484554**



**In View – Well, Access Road, Flowline**

**NORTHEAST – 40.350823 / -104.488522**



**In View – Well, Tank Battery, Access Road, Flowline**

**SOUTHWEST – 40.354515 / -104.485038**



**In View – Well, Tank Battery, Access Road, Flowline**

**SOUTHWEST – 40.353896 / -104.486531**



**In View – Tank Battery, Access Road, Flowline**

**EAST – 40.350827 / -104.488546**



**In View – Well, Tank Battery, Access Road, Flowline**

**EAST – 40.350821 / -104.488521**



**In View – Tank Battery, Flowline**

**SOUTH – 40.351882 / -104.487671**



**In View – Tank Battery, Flowline**

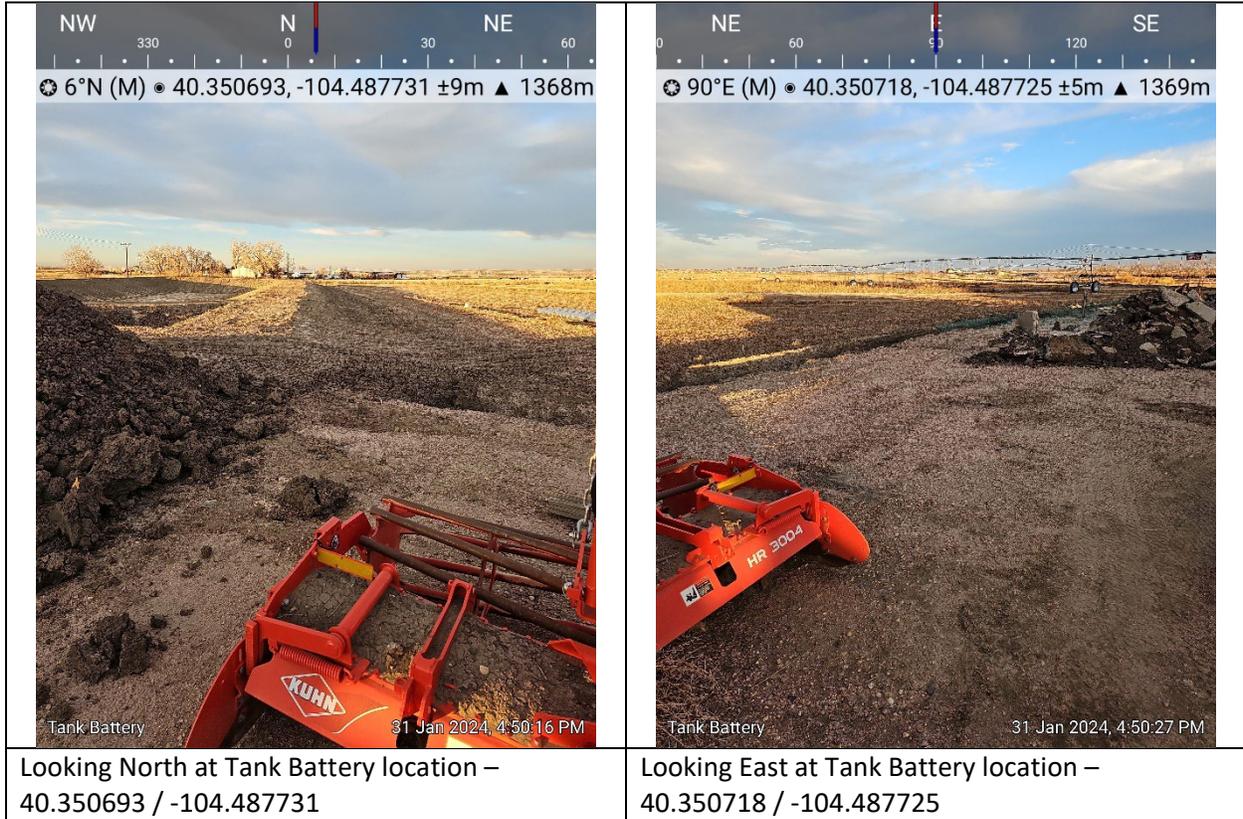
**WEST – 40.350772 / -104.486764**

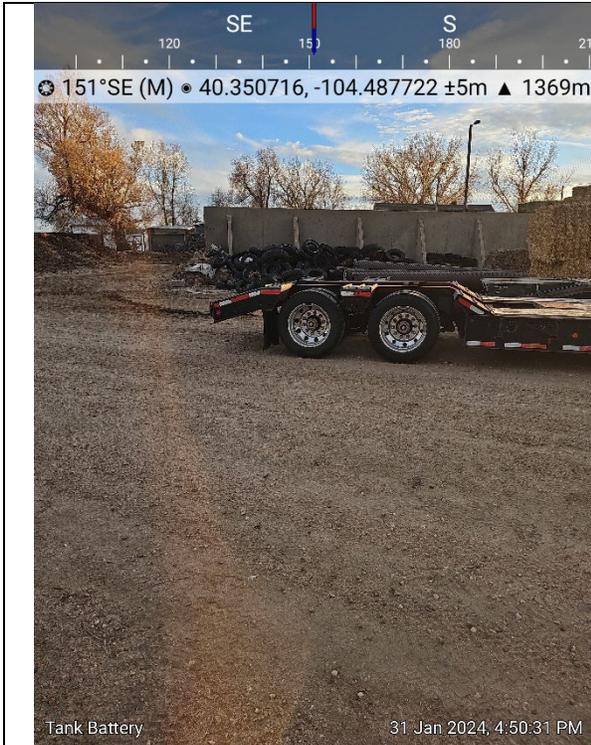
# Off-Location Tank Battery Adjacent to Cropland – Handheld Photographic Evidence

*Site Investigation and Photos Date*

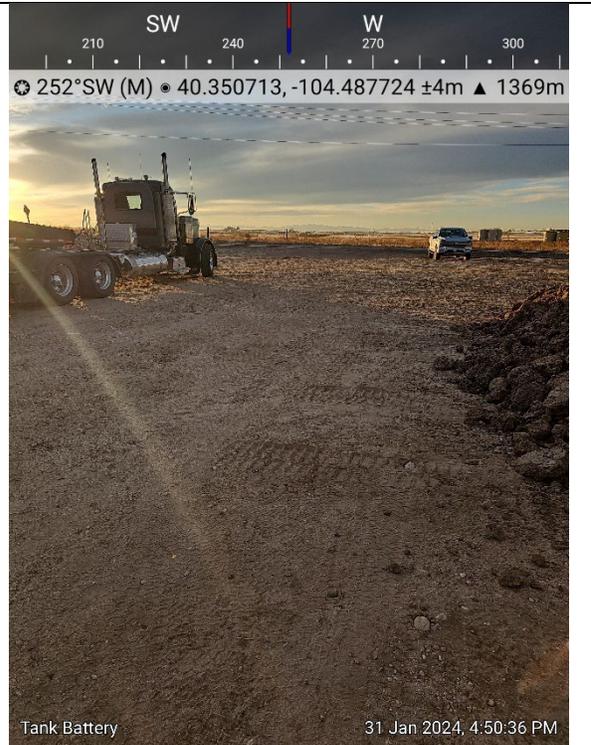
31 Jan 2024

No handheld photos taken at wellhead due to crop.





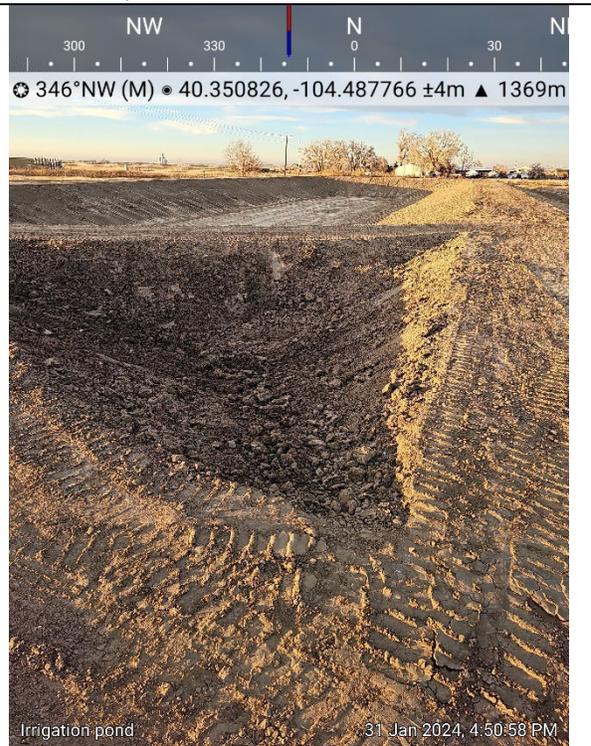
Looking South at Tank Battery location –  
40.350716 / -104.487722



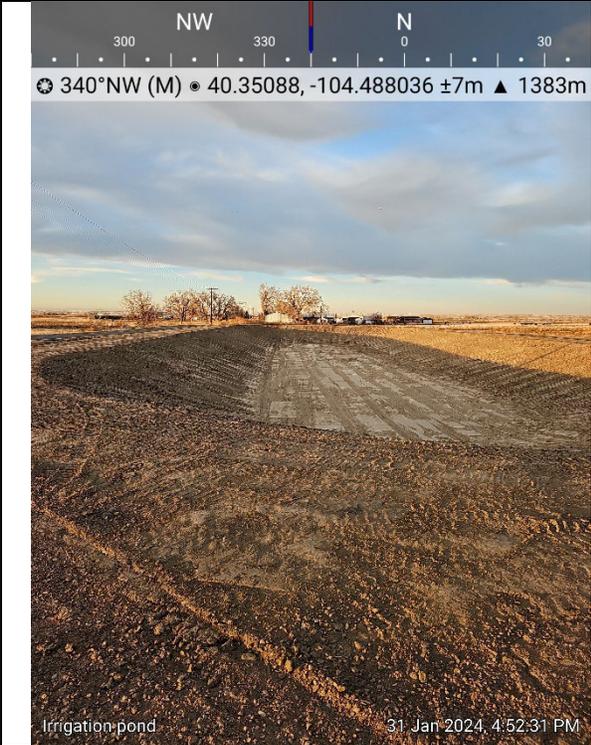
Looking West at Tank Battery location –  
40.350713 / -104.487724



Ditch near Tank Battery Location –  
40.350746 / -104.487716



Looking North at Irrigation Pond North of Tank  
Battery – 40.350826 / -104.487766



Looking North at Irrigation Pond North of Tank Battery – 40.350880 / -104.488036

# Cardinal Directional Drone Photos Showing No Equipment Remaining

*Site Investigation and Photos Date*

18 Aug 2022

*Drone Photo Height*

300 feet

Cardinal directional photos of the site. Reference overview map.





**In View – Well, Access Road, Flowline**

**EAST – 40.353302 / -104.488800**



**In View – Well, Tank Battery, Access Road, Flowline**

**SOUTH – 40.355309 / -104.485971**



**In View – Well, Access Road, Flowline**

**WEST – 40.353715 / -104.483675**



**In View – Tank Battery, Flowline**

**EAST – 40.350871 / -104.489391**



**In View – Tank Battery, Flowline**

**SOUTH – 40.352280 / -104.487724**



**In View – Tank Battery, Flowline**

**WEST – 40.352280 / -104.487724**

## Cardinal Directional Drone Photos & Reference Area Photos

*Site Investigation and Photos Date*

22 Jun 2023

*Drone Photo Height*

150 feet

Cardinal directional photos of the site. Reference overview map.



**In View** – Well, Access Road, Flowline

**NORTH** – 40.353630 / -104.485931



**In View** – Well, Access Road, Flowline

**EAST** – 40.353805 / -104.486161



**In View** – Well, Access Road, Flowline

**SOUTH** – 40.353906 / -104.485979



**In View** – Well, Access Road, Flowline

**WEST** – 40.353854 / -104.485816



**In View** – Well, Access Road, Flowline

**WEST** – 40.353890 / -104.485601



**In View** – Well, Access Road, Flowline

**NORTH** – 40.353578 / -104.485946



**In View** – Well, Access Road, Flowline

**EAST** – 40.353843 / -104.486153



**In View** – Well, Access Road, Flowline

**SOUTH** – 40.354082 / -104.485961



**In View** – Well, Access Road, Flowline

**WEST** – 40.353859 / -104.485858



**In View – Tank Battery, Flowline**

**EAST – 40.350860 / -104.488478**



**In View – Tank Battery, Flowline**

**SOUTH – 40.351629 / -104.487773**



**In View – Tank Battery, Flowline**

**WEST – 40.350837 / -104.486887**

# ATTACHMENTS

## Maps and Figures

### *Area Maps*

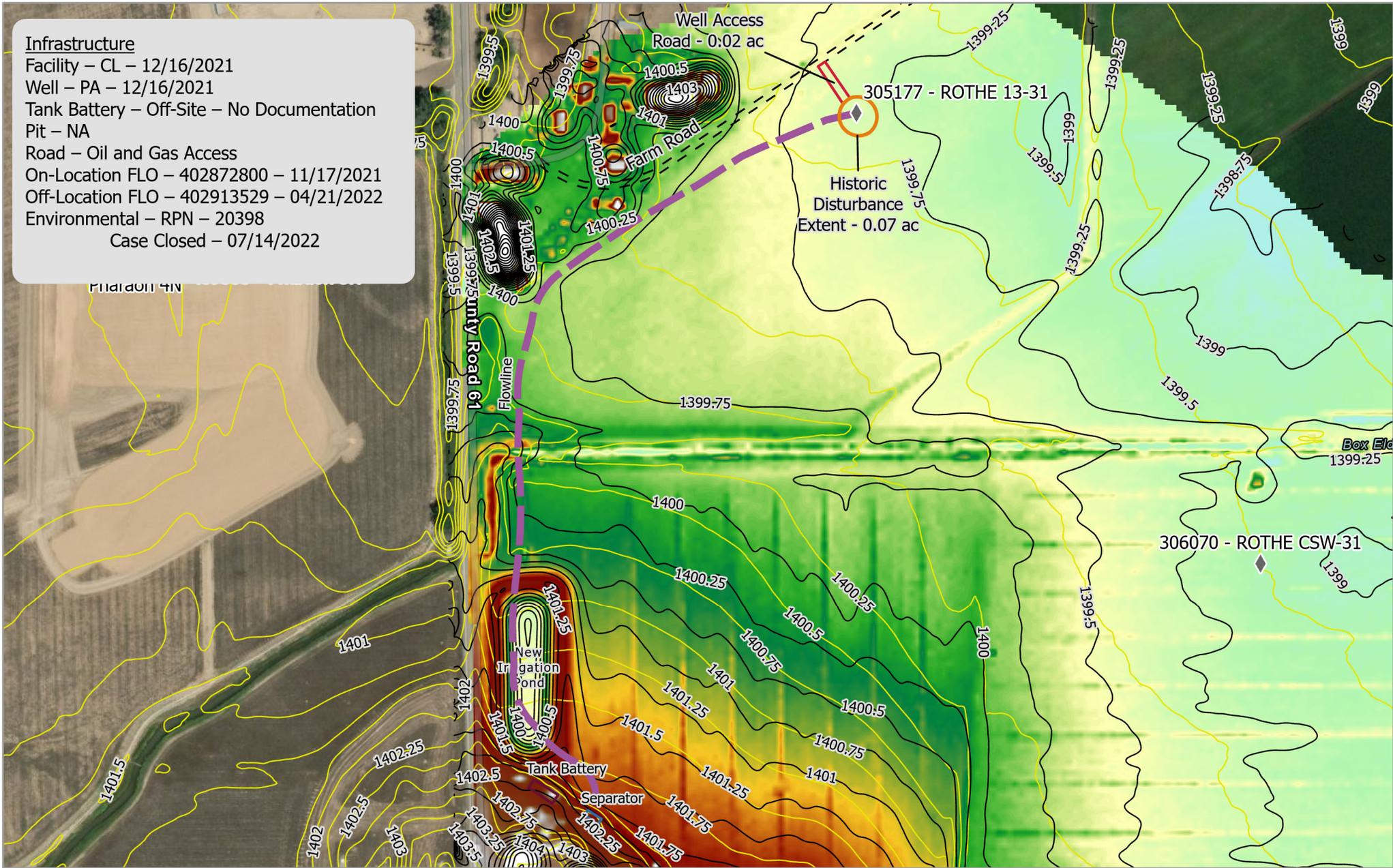
Pre-Infrastructure Overview  
Elevation & Contours  
Hydrology  
Year 1

## Background Information

*Natural Resources Conservation Service (NRCS) Map Unit Description*  
Reference Soil Document

**Infrastructure**

Facility – CL – 12/16/2021  
 Well – PA – 12/16/2021  
 Tank Battery – Off-Site – No Documentation  
 Pit – NA  
 Road – Oil and Gas Access  
 On-Location FLO – 402872800 – 11/17/2021  
 Off-Location FLO – 402913529 – 04/21/2022  
 Environmental – RPN – 20398  
 Case Closed – 07/14/2022



**CIV - 305177- ROTHE 13-31**  
**Map Extent - Elevation & Contours**

Imagery: RS DSM, CWCB  
 Imagery Date: 31 Jan 2024, 2018  
 Map Date: 05 Feb 2024  
 Datum: WGS 1984 UTM Zone 13N  
 POC: Soil Sage

◆ Wells	▭ Tank Battery
~ 0.25 Meter Contours (2024)	▭ Separator
~ 0.25 Meter Contours (2018)	Elevation
— Flowline	Meters
▭ Historic Disturbance Extent	1411
▭ Road	1398

0 37.5 75 150 Meters

Disturbance Extent: 0.10 Acres  
 Pad Location: 40.353847  
 Scale: 1:2,600 -104.485943

N

**Infrastructure**

Facility – CL – 12/16/2021  
 Well – PA – 12/16/2021  
 Tank Battery – Off-Site – No Documentation  
 Pit – NA  
 Road – Oil and Gas Access  
 On-Location FLO – 402872800 – 11/17/2021  
 Off-Location FLO – 402913529 – 04/21/2022  
 Environmental – RPN – 20398  
 Case Closed – 07/14/2022



**CIV - 305177- ROTHE 13-31**  
**Map Extent - Hydrology**

Imagery: RS DSM, Orthomosaic, Maxar  
 Imagery Date: 31 Jan 2024, 22 Jun 2023, 1 Aug 2020  
 Map Date: 05 Feb 2024  
 Datum: WGS 1984 UTM Zone 13N  
 POC: Soil Sage

◆ Wells	Stream Order
— Flowline	1
— Historic Disturbance Extent	2
— Road	3
— Tank Battery	4
— Separator	5

0 37.5 75 150 Meters

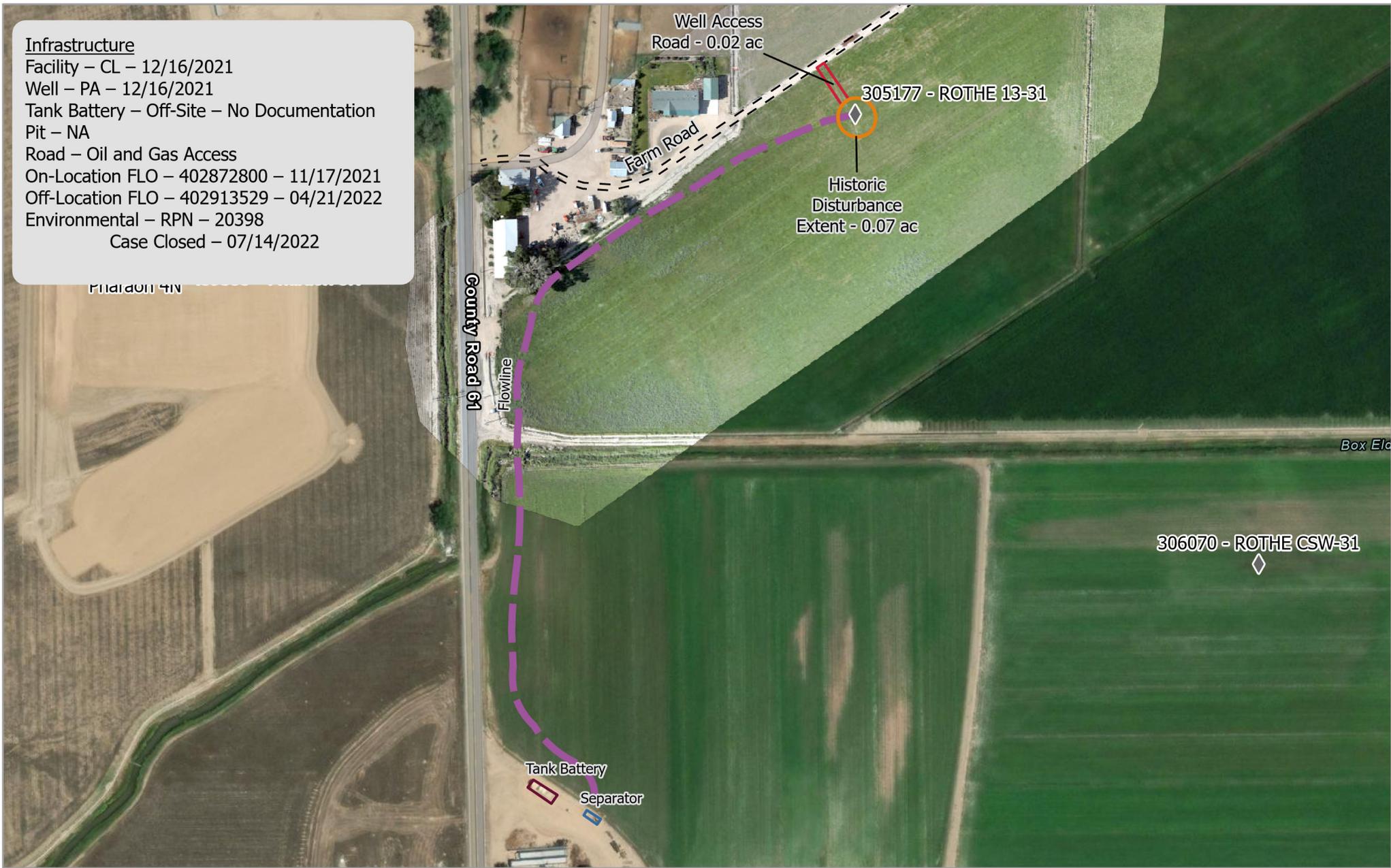
Disturbance Extent: 0.10 Acres  
 Scale: 1:2,600

Pad Location: 40.353847  
 -104.485943

N

**Infrastructure**

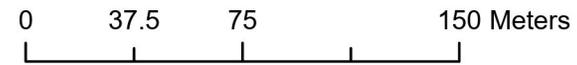
Facility – CL – 12/16/2021  
Well – PA – 12/16/2021  
Tank Battery – Off-Site – No Documentation  
Pit – NA  
Road – Oil and Gas Access  
On-Location FLO – 402872800 – 11/17/2021  
Off-Location FLO – 402913529 – 04/21/2022  
Environmental – RPN – 20398  
Case Closed – 07/14/2022



**CIV - 305177- ROTHE 13-31  
Map Extent - Year 1**

Imagery: RS Orthomosaic, Maxar  
Imagery Date: 18 Aug 2022, 1 Aug 2020  
Map Date: 05 Feb 2024  
Datum: WGS 1984 UTM Zone 13N  
POC: Soil Sage

- ◆ Wells
- Flowline
- Historic Disturbance Extent
- Road
- Tank Battery
- Separator



Disturbance Extent:  
0.10 Acres  
Scale: 1:2,600

Pad Location:  
40.353847  
-104.485943



Service Credits - Maxar, Microsoft, Esri  
Community Maps Contributors, ©  
OpenStreetMap, Microsoft, Esri, TomTom,  
Garmin, SafeGraph, GeoTechnologies, Inc.  
METI/NASA, USGS, EPA, NPS, US Census  
Bureau, USDA, USFWS



# Soil Properties

## USDA Soil Description

### Reference Soil Information

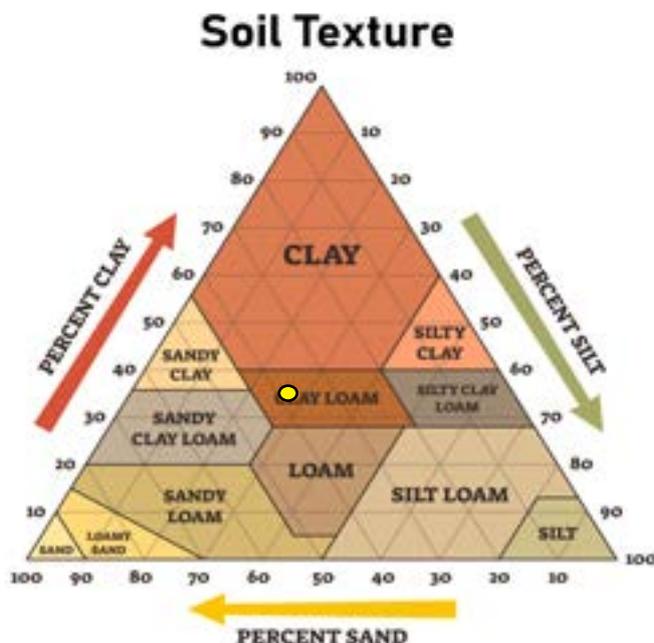
The location of the site is contained within one soil type, Nunn clay loam.

### Map Unit 41 Reference Soil information - Nunn clay loam

This soil is formed from pleistocene aged alluvium and/or eolian deposits. Landform is terraces, with the Clayey Plains Ecological Site. Soils are well drained with a high water holding capacity, and slope 0-1 percent.

Depth (in)	Physical			Chemical			
	Texture	Bulk Density	Partical Size Percent sand, silt, clay	pH	EC	SAR	OM%
0-10	Clay Loam	1.39	39-27-34	7.4	0.5	0.0	1.50
10-20	Clay Loam	1.37	32-30-38	7.6	0.5	0.0	1.50
20-30	Clay Loam	1.41	36-28-36	7.8	0.5	0.0	1.20
30-40	Clay Loam	1.51	46-31-22	8.4	0.5	0.1	0.31
40-50	Loam	1.53	47-31-22	8.4	0.5	0.1	0.25
50 +	Loam	1.54	48-28-24	8.5	0.5	0.1	0.25

### Soil Texture Triangle reflect the 0-10 in depth Erosion Potential (10 inches)



- K Factor, Whole soil - .32. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

- Wind Erodibility Group – 6. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

There is a general relationship of soil bulk density to root growth based on soil texture. Bulk densities ideal for root growth are less than 1.60 g/cc for sandy textures, less than 1.40 g/cc for loamy textures, and less than 1.10 g/cc for clayey textures. Bulk densities that restrict root growth are greater than 1.80 g/cc for sandy textures, 1.65 g/cc for loamy textures, and 1.47 g/cc for clayey textures