State of New Mexico
Oil Conservation Division

Incident ID	nAPP2209827356
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Andrew Parker Title: Env. Scientist

Signature: Andrew Parker Date: December 12, 2022

email: aparker@ameredev.com Telephone: 970-570-9535

OCD Only

Received by: Jocelyn Harimon Date: 12/12/2022

☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Jennifer Nobui Date: 01/10/2023

Ameredev II, LLC
2901 Via Fortuna Suite 600 • Austin, Texas 78746 • Phone (737) 300-4700

December 12, 2022

NM Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr.
Santa Fe, NM 87505

RE: Chloride Capture Remediation Plan
Incident ID: nAPP2209827356
Par Three NGL Riser
AEP #: 20220402-2300-water

NMOCD:

Ameredev Operating is pleased to submit this chloride capture remediation plan. Upon NMOCD's approval, Ameredev will implement the proposed plan within 60-days. The chloride capture program is on Intrepid Potash surface. Intrepid's email approval is attached.

As presented in our October 4th meeting, the proposed remediation plan is limited to the area south of the pipeline right-of-way (ROW). Exhibit 1 identifies the subject portion. The release area along the pipeline ROW has been remediated, restored, and reclaimed to the most stringent closure criteria per Table 1 of 19.15.29 NMAC. Confirmation sampling of base grids G-01 through G-03.1 exhibit closure criteria below the most stringent concentrations listed in Table 1 of 19.15.29 NMAC.

To determine depth-to-water within ½-mile of the release extent, Ameredev Operating began a depth-to-water borehole program mid-September 2022. The depth to water boring nearest to the release area is mapped on Exhibit 7:

- MISC-408 (CP-1919 POD 1) is located 184-feet east of the release extent. Depth to water is noted as >101-feet. The Well Log is presented in Appendix A. The borehole has been plugged according to OSE regulations.

A second water well is located 0.35-miles south-southeast of the release extent. The well is identified on Exhibit 7 as USGS-15093. The USGS 7.5 Minute Quadrangle topographic map identifies the well as the "North K Windmill". The well is referenced in the OSE database as CP-00180. The OSE well log is provided in Appendix A. The well has a reported depth of 605-feet and a depth-to-water of 296.7-feet recorded by the USGS on 03/07/1996.

As shown in the attached photos the subject release area intersects narrow drainages with defined banks and sides. Location of photos are mapped in Exhibits 2 – 5. Some drainage bottoms measure not more than 1.5 feet across. An intermittent stream is mapped on the 7.5 Minute Quadrangle USGS Topographic Map and intersect the release extent as a dotted blue line on Exhibit 1. Vegetation along the banks and pastureland exhibit good, healthy growth while adding soil stability during stormwater runoff. A hard caliche layer was observed along portions of the drainage bottoms. This hard caliche layer prevents erosion during stormwater runoff.

Characterization samples were collected throughout the subject area (Exhibit 2 - 5). Hand auger sampling technologies were deployed to minimize impact to the environment and minimize surface disturbance from heavy equipment. A hard caliche layer at depth prevented vertical delineation at some sample locations as presented in the "Notes" column of Table A. A rock bar was utilized to break up the hard caliche but efforts were unsuccessful.

Table A summarizes the characterization/delineation results. All samples exhibited hydrocarbons below laboratory detection levels. Chloride remains the constituent of concern. Evaluation of analytical data demonstrates that chloride concentrations at multiple sample grid locations are increasing with depth. Climate data shows that significant rainfall events occurred in June and August 2022, which is the likely cause of the observed chloride ion movement. The August sampling event occurred before the August precipitation and continued movement of chlorides likely occurred after this storm event.

Ameredev proposes a variance to 19.15.29 NMAC for the following:

1. A significant water course mapped as an intermittent stream crosses the southern half of the release extent. Per 19.15.29.12.C(4)(a)(i) NMAC, remediation is required to meet Closure Criteria listed in Table 1 of 19.15.29 NMAC as if groundwater is ≤50-feet below ground surface
2. Per 19.15.29.13.A. The responsible party must substantially restore the impacted surface areas to the condition that existed prior to the release or their final use. Restoration of the site must include the replacement of removed material and must be replaced to the near original relative positions and contoured to achieve erosion control, long term stability and preservation of surface water flow patterns.

Remediation of impacted soils using mechanical equipment to meet closure criteria will negatively impact the environment. The stability and preservation of natural surface water flow patterns will be compromised. Impacted to ground water is unlikely.

- Disturbance to the drainages.
  - Caliche layer
    - A hard caliche layer is present along the drainage bottom. The caliche is visible along portions of the drainage. In areas where the caliche was not observed, the caliche layer was encountered at shallow depths while hand augering and noted by "Auger Refusal" in Table A. The observation is consistent with the NRCS soil classification presented in the August 24, 2022 remediation plan.
    - During remediation along the pipeline ROW, the same hard caliche was observed. The hard caliche was approximately 1-foot thick. Underlying the hard caliche layer was medium to soft caliche.
    - The hard caliche layer is likely a localized confining layer, impeding the vertical movement of surface water.
    - The hard caliche layer prevents substantial erosion during stormwater runoff.
  - Bank stabilization
    - Good vegetation exists along drainage banks, creating stabilization.
    - The natural drainages are narrow in width ranging from 1 to 3 feet in width. Mechanical remediation within the natural drainages will disturb the stabilized banks and significant erosion will occur during stormwater runoff.
  - Terminus of the drainages
    - The mapped "intermittent stream" is 0.75 miles in length. It is not connected to any other mapped watercourse.
    - The unmapped drainages withing the release extent terminates into a slightly sloping alluvial surface. Good vegetative growth was observed throughout the alluvial surface.
    - Disturbance to the alluvial surface will create additional erosion. Erosion is likely to continue after surface disturbance due to mechanical remediation.

Proposed Remediation Plan

The proposed remedial action is to cause chloride "movement and capture" through the unsaturated zone within the release area. Limited soil sampling will occur semiannually to monitor for a decrease in chloride concentrations. Hydrocarbons were not detected during characterization and delineation; therefore, hydrocarbons will not be further evaluated.

The chloride movement and capture areas are divided into four regions (north to south) as presented on Exhibit 6:

I. North Drainage
II. North Catch Basin
III. South Drainage
IV. South Catch Basin

Natural and artificial precipitation events will induce chloride movement. The volume of water necessary to reduce chloride concentrations to meet Closure Criteria is approximately a 4-foot water column over the proposed remediation area; equaling 19,638 bbls of fresh water. Artificial precipitation events will be simulated by 20 successive watering events 6 weeks apart when there is insufficient natural precipitation to mobilize chlorides. More frequent watering events may be necessary to maintain favorable soil moisture content. Each watering event will represent a 2.5-inch rainfall event.

Water requirements were calculated[1], where

Dw = KDs(ECo/ECt)		
D_w	Depth of drainage water required (inches)	
D_s	Thickness of impacted layer of soil (inches)	
K	Drainable porosity (%100)	
EC_o	Initial soil EC	
Ec_t	Target EC after treatment	
D_s	48	
K	0.2	
EC_o	4.21	
Ec_t	0.87	
D_w	46.46	inches
	3.87	feet

Target EC was calculated from the y-intercept, where $y = 757.24x - 63.104$; $R^2 = 0.9417$.

1 Sublette, Kerry L. (undated). Remediation of Brine Impacted Soils. PowerPoint presentation.

Incident ID: nAPP2209827356
Par Three NGL Riser
AEP #: 20220402-2300-water

Correlating electrical conductivity (EC) field measurements with laboratory chloride analysis of soils collected at the subject release resulted in a R^2 value of 0.9417 (Figure 1). Applying the y-intercept equation, an EC value of <0.87 mS/cm correlates with a chloride concentration <600 mg/kg.

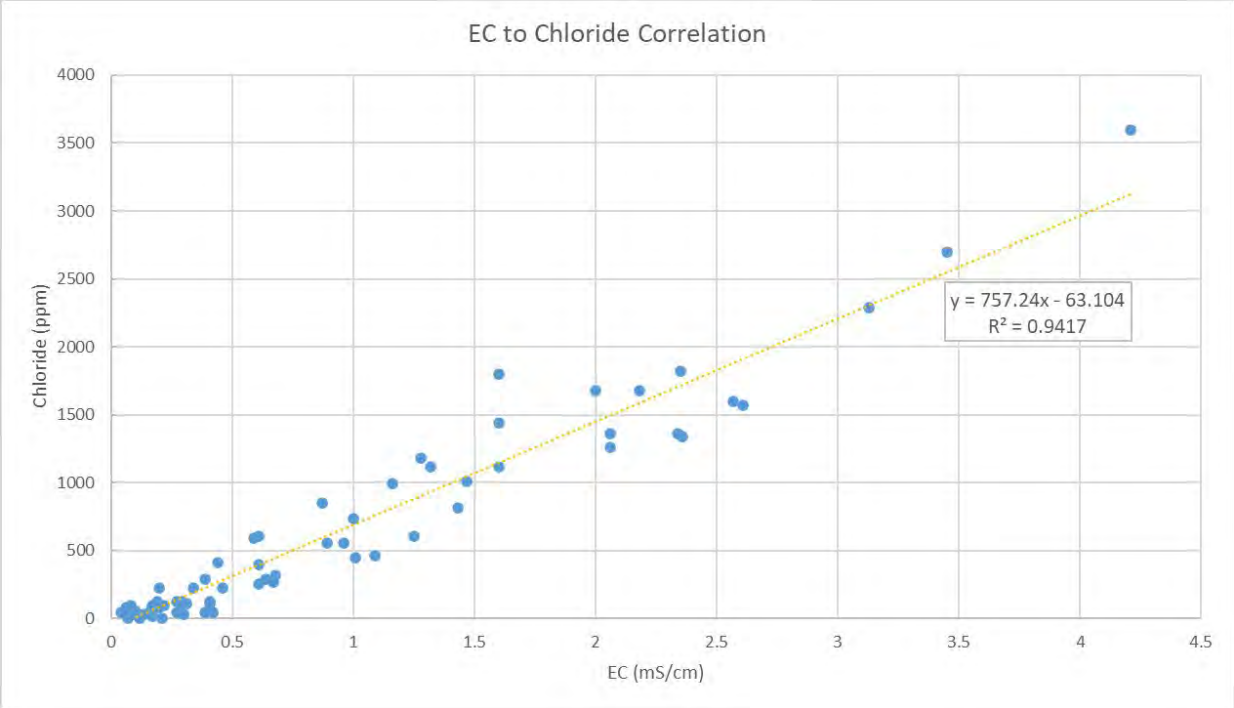

Figure 1: Electrical Conductivity to Chloride Correlation

According to Sublette[1], "A unit depth of irrigation water will remove about 80% of the salts from a unit depth of impacted soil", where

Inches of water	24	
Thickness of soil (inches)	24	
EC_o	4.21	mS/cm
$EC_{removed}$	3.37	mS/cm
Resulting soil leachate	0.84	mS/cm

24-inches of water will cause chloride concentrations to be less than 600 mg/kg (EC<0.87 mS/cm) in the upper 2-feet of the soil horizon.

12/12/2022

Artificial precipitation volumes and flow sequence at each of the four regions:

i. At the head of the North Drainage, 185 bbls, per water event, of fresh water will be applied to open flow through the drainage to stimulate chloride movement. The leachate water will be captured in a buried perforated drain pipe within the North Catch Basin area.
ii. Within the North Catch Basin area, fresh water will be applied via aerial spray from a water truck. 418 bbls, per watering event, of water will be applied to stimulate chloride movement. It is anticipated that surface and infiltrated water will follow surface topography and drain toward the natural drainage and into the perforated pipe. Collected leachate water in the perforated pipe will subsequently flow into a catch basin at the southern end of the North Catch Basin area.
iii. At the head of the South Drainage, 111 bbls, per water event, of fresh water will be applied to open flow through the drainage to stimulate chloride movement. The leachate water will be captured in a buried perforated drain pipe within the South Catch Basin area.
iv. Within the South Catch Basin area, fresh water will be applied via aerial spray from a water truck. 268 bbls, per water event, of water will be applied to stimulate chloride movement. It is anticipated that surface and infiltrated water will follow surface topography and drain toward the natural drainage and into the perforated pipe. Collected leachate water in the perforated pipe will subsequently flow into a catch basin at the southern end of the South Catch Basin area.
v. The catch basins will be monitored after natural and artificial precipitation events for water accumulation. When the catch basins reach capacity, the leachate will be removed and hauled off-site for proper disposal.

The 4-inch perforated drain pipe will be installed with a poly filter sock to prevent soil from clogging the perforations. The pipe will be buried approximately 3 to 4-feet below ground surface, just above the caliche layer. The drain pipe will slope downgradient with sufficient slope to allow for flow into the catch basin.

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The catch basin will be constructed of HDPE and will be a low profile design with a capacity of 1,175 gallons (28 bbls). The inlet of the catch basin will be at sufficient depth for capture of the drain pipe discharge.

An Electromagentic Survey (EM Survey) will be conducted within the area of interest prior to construction and at 6-month intervals to monitor for changes in electrical conductivity (soil salinity). Soil samples will be collected in areas showing elevated EC readings for the analysis of chloride. The EM Survey and soil analyses will be used to evaluate the effectiveness of chloride movement efforts.

Per 19.15.29.14.A (2), the proposed remediation plan and requested variance will provide equal or better protection of fresh water, public health and the environment

1. The hard confining caliche layer will remain intact and shall continue to impede infiltration of impacted surface water during precipitation events.
2. Surface water flow and capture during wetting events (natural and artificial) will continue to reduce the mass load of constituents of concern (chloride). Hydrocarbons were below laboratory detection levels.
3. Limited disturbance to the natural drainage patterns minimizes erosion and maintains the natural surface water flow patterns.
4. Existing vegetation will continue to provide surface soil stability and provide habitat for wildlife.

At the cessation of the chloride capture program, the surface will be reclaimed in accordance with 19.15.29.13.D.

Sincerely,
Ameredev II, LLC

Andrew Parker
Env. Scientist

12/12/2022

From: Travis McBain
To: Andrew Parker
Subject: [EXTERNAL] RE: Par 3 Riser Variance Proposal 20220402-2300-water
Date: Tuesday, December 6, 2022 11:19:59 AM
Attachments: nAPP2209827356 Chloride Capture Remediation Plan_draft.pdf

External (travis.mcbain@intrepidpotash.com)

Report This Email FAQ Protection by INKY

Parker,

We have reviewed and do not have any comments to add at this time. We do however request that Ameredev copy us on its final correspondence with NMOCD.

Best Regards,

Travis McBain, CPL
Director of Land/Buisness Development
INTREPID
707 17th Street, Suite 4200
Denver, CO 80202
405.938.5411 (mobile)
travis.mcbain@intrepidpotash.com

From: Andrew Parker <aparker@ameredev.com>
Sent: Tuesday, December 6, 2022 8:05 AM
To: Travis McBain <travis.mcbain@intrepidpotash.com>
Subject: FW: Par 3 Riser Variance Proposal 20220402-2300-water

Hello Travis. Checking to see if you received the below email?

Andrew Parker
Environmental Scientist
970-570-9535
AMEREDEV

From: Andrew Parker
Sent: Wednesday, November 30, 2022 9:57 AM
To: Travis McBain <travis.mcbain@intrepidpotash.com>
Subject: Par 3 Riser Variance Proposal 20220402-2300-water

Travis,

Ameredev has been working with NMOCD to develop an alternative remediation plan for the Par 3 Riser release area that flowed along a drainage. Dig-haul-dispose remediation methods along the drainage will negatively impact the environment. The stability and preservation of natural surface water flow patterns will be compromised. Impacted to ground water is unlikely.

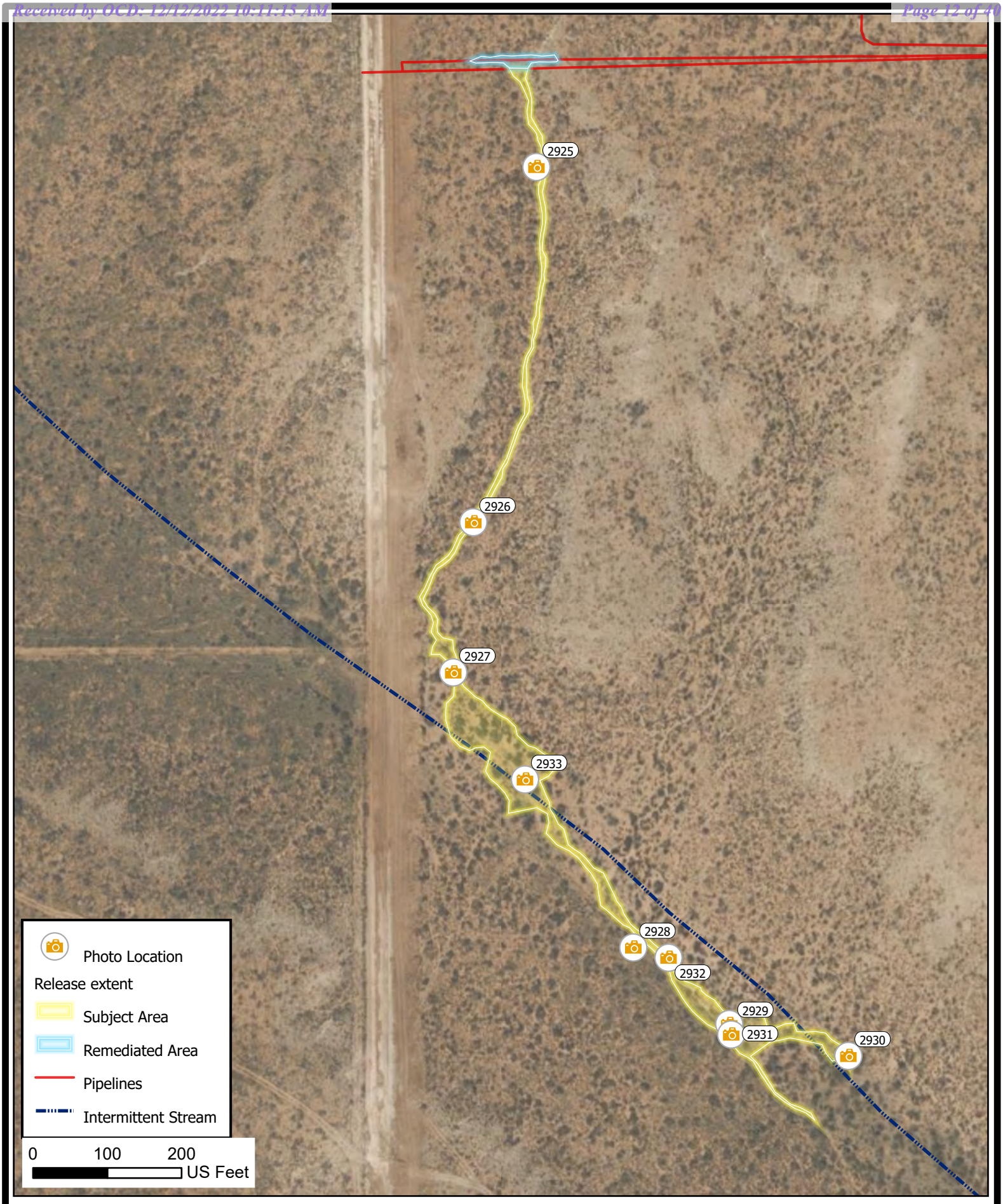
Attached is the proposed plan to remediate the impacted soils via chloride movement and capture. As Intrepid is the surface owner, Ameredev respectfully asks for approval of the proposed plan. Upon Intrepid's approval, we will submit to NMOCD for final approval.

Please contact me with any questions or concerns.

Best Regards,

Andrew Parker
Environmental Scientist
970-570-9535

Exhibits



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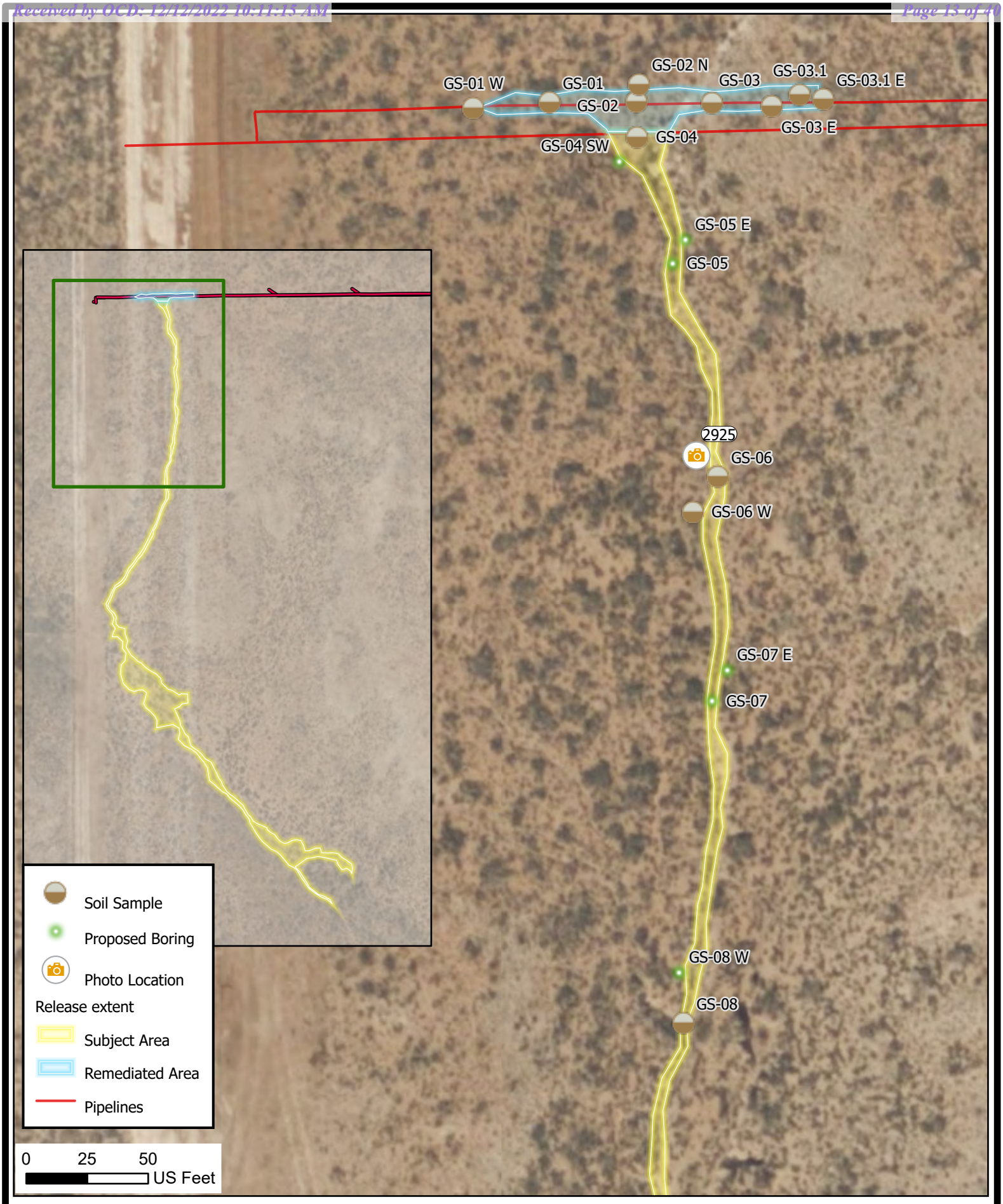
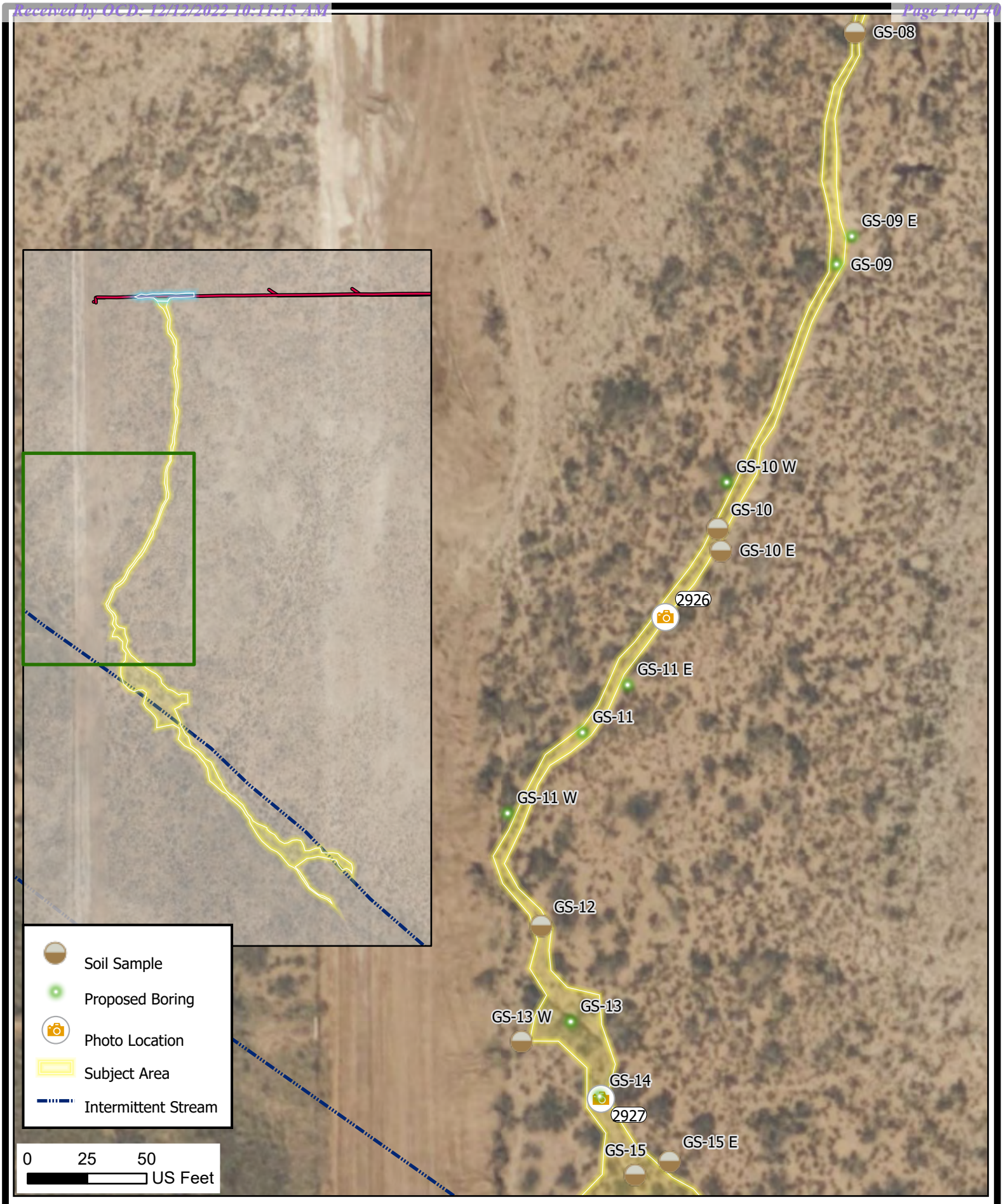
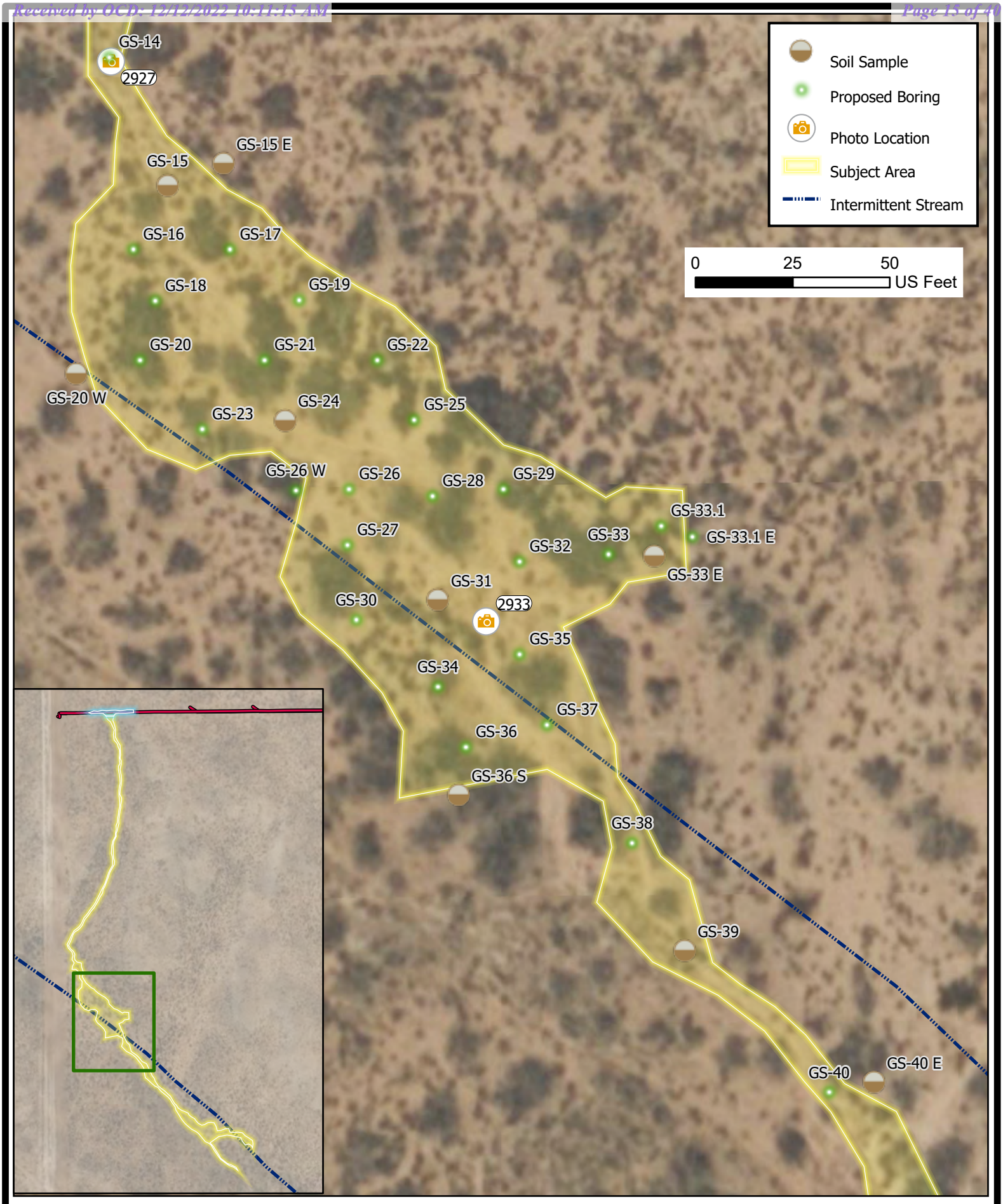
Site Map - Variance Request Par Three NGL Riser	Exhibit 1
Incident ID: nAPP2209827356 AEP #: 20220402-2300-water	09/27/2022



AMEREDEV	Sample Points- North Quarter Par Three NGL Riser	Exhibit 2
	Incident ID: nAPP2209827356 AEP #: 20220402-2300-water	09/27/2022



AMEREDEV Ameredev II, LLC	Sample Points- North Central Quarter Par Three NGL Riser	Exhibit 3
	Incident ID: nAPP2209827356 AEP #: 20220402-2300-water	09/27/2022



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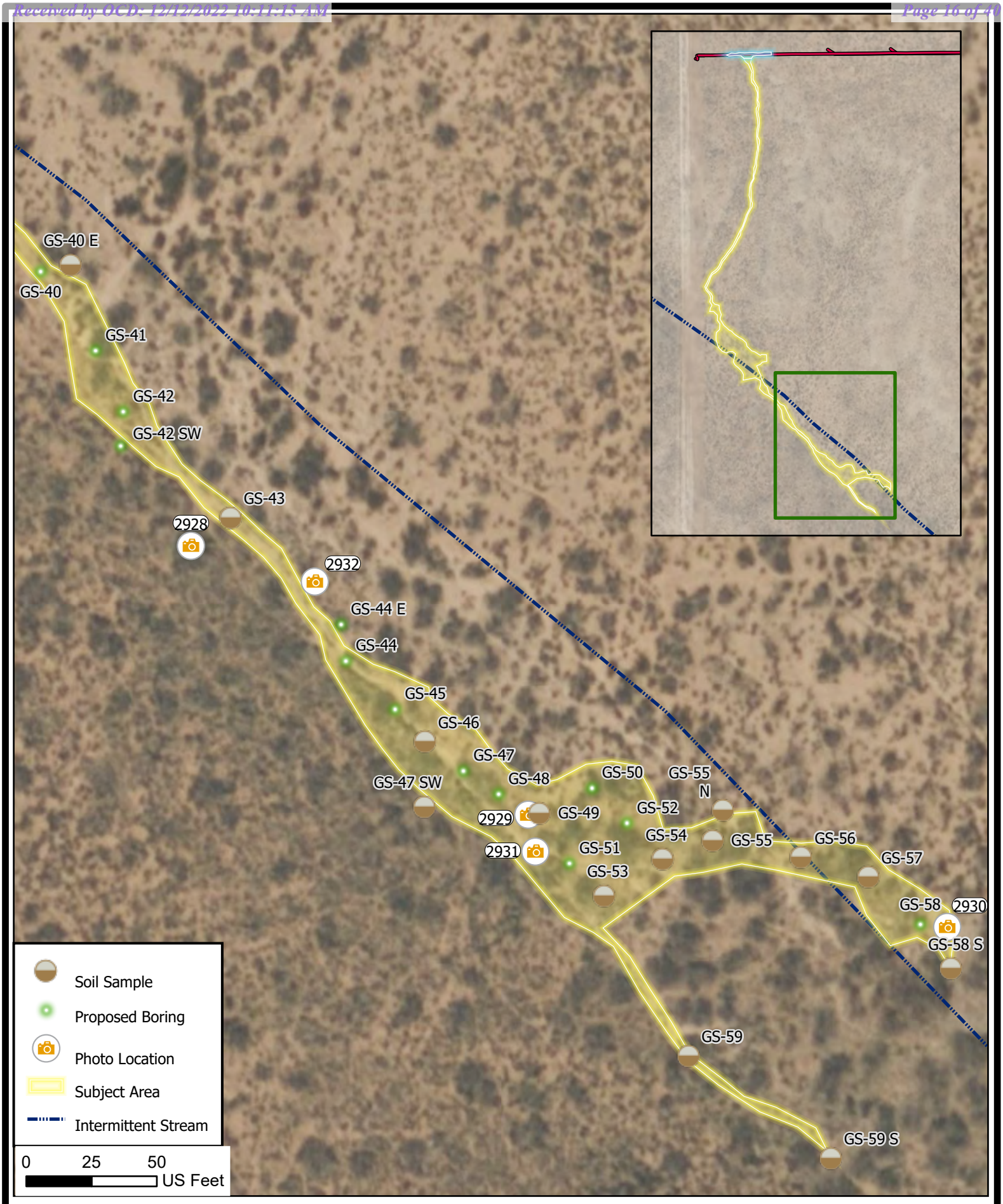
Sample Points- South Central Quarter Par Three NGL Riser	Exhibit 4
Incident ID: nAPP2209827356 AEP #: 20220402-2300-water	09/27/2022



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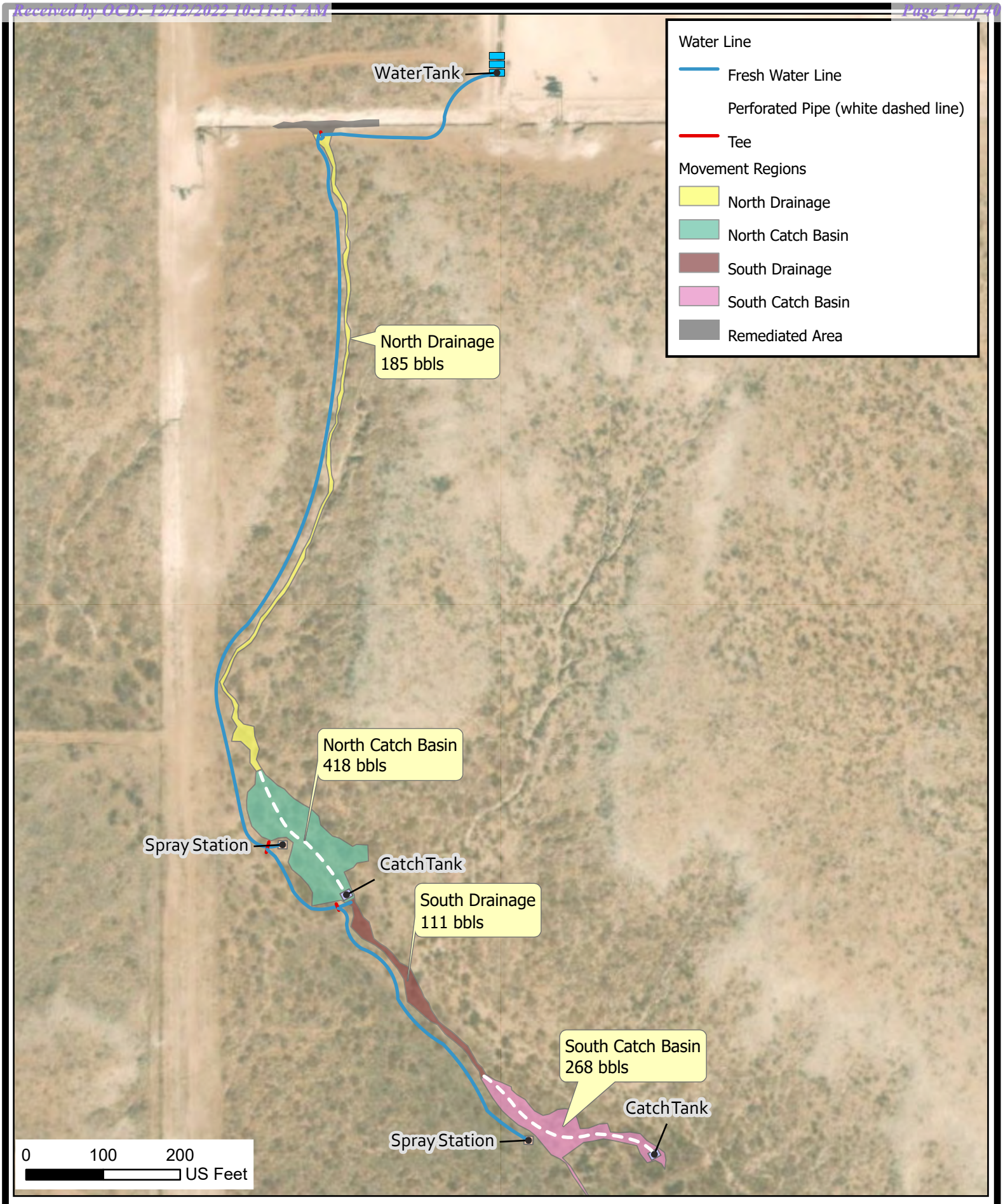
Sample Points- South Quarter Par Three NGL Riser	Exhibit 5
Incident ID: nAPP2209827356 AEP #: 20220402-2300-water	09/27/2022



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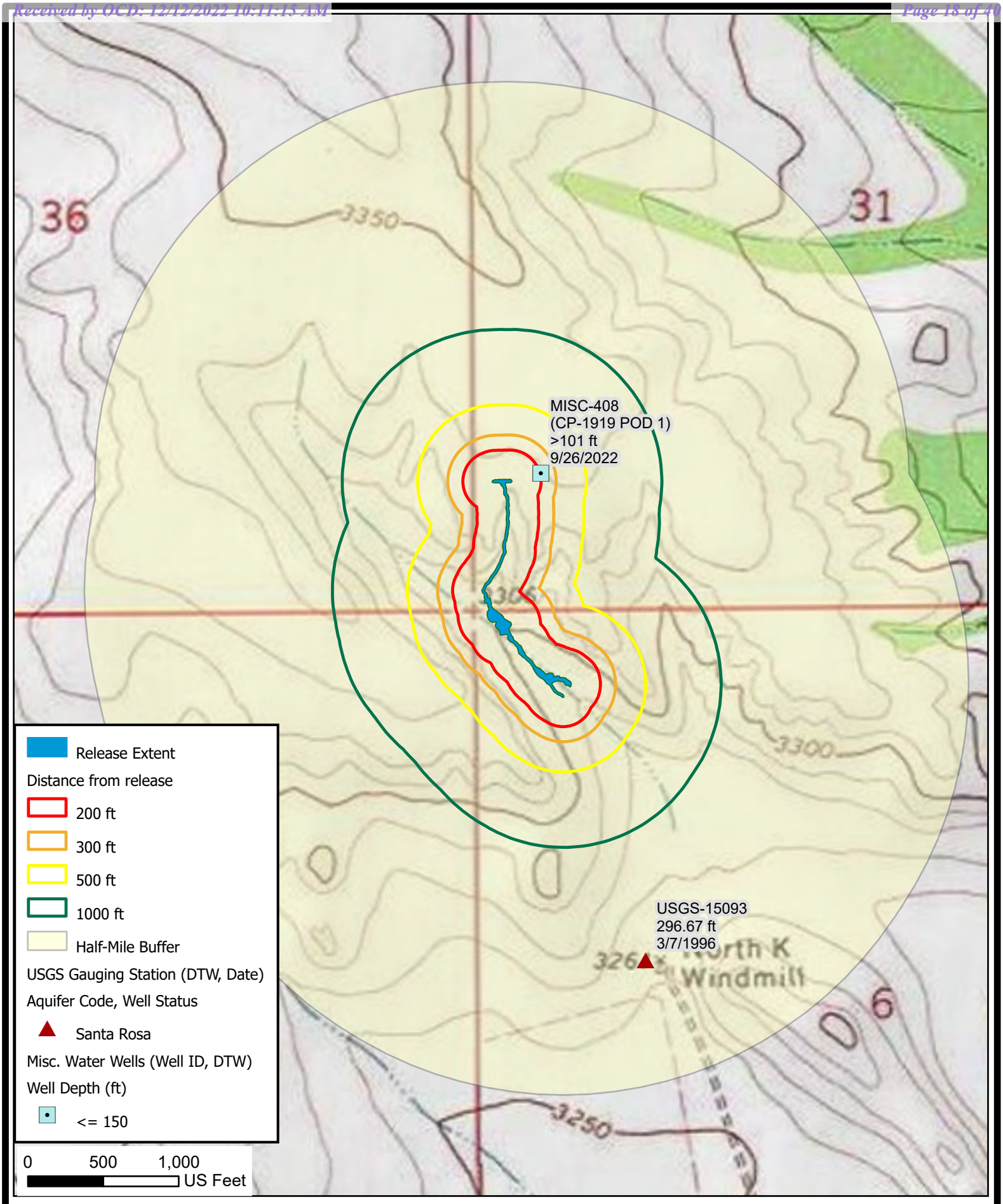
Chloride Movement Regions Par Three NGL Riser	Exhibit 6
Incident ID: nAPP2209827356 AEP #: 20220402-2300-water	10/31/2022



AMEREDEV	Depth to Water Par Three NGL Riser	Exhibit 7
	Incident ID: nAPP2209827356 AEP #: 20220402-2300-water	10/31/2022

Tables

September 27, 2022

Table A
Summary of Analytical

Incident ID: nAPP2209827356
Par Three NGL Riser
AEP #: 20220402-2300-water

Sample ID	Date	Discrete Depth (Feet)	Top Depth (Feet)	Bottom Depth (Feet)	Surface Use	Chloride (mg/kg)	GRO+DRO (mg/kg)	TPH Ext. (mg/kg)	Benzene (mg/kg)	BTEX (mg/kg)	Comments	Notes
NMOCD Closure Criteria												
0 - 4 feet & "not in-use"						600	--	100	10	50		
> 4 ft or "in-use"						600	100	100	10	50		
GS-01	8/16/2022		0	1	ROW	96	<20	<30	<0.05	<0.3	Vertical Delineation	Auger Refusal
GS-01 W	8/16/2022		0	2	ROW	32	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-02	8/16/2022		0	2	ROW	1340	<20	<30	<0.05	<0.3	Vertical Delineation	Removed
GS-02	9/14/2022	2			ROW	16	<20	<30	<0.05	<0.3	Confirmation	Auger Refusal
GS-02 N	8/16/2022		0	2	ROW	80	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-03	9/14/2022	2			ROW	32	<20	<30	<0.05	<0.3	Confirmation	
GS-03 E	8/16/2022		0	2	ROW	848	<20	<30	<0.05	<0.3	Horizontal Delineation	Removed
GS-03.1	9/14/2022	2			ROW	32	<20	<30	<0.05	<0.3	Confirmation	
GS-03.1 E	9/14/2022		0	2	ROW	<16	<20	<30	<0.05	<0.3	Confirmation	
GS-04	8/16/2022		0	2	Pasture	48	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-04	8/16/2022		2	3	Pasture	112	<20	<30	<0.05	<0.3	Vertical Delineation	Auger Refusal
GS-06	8/16/2022		0	1	Pasture	96	<20	<30	<0.05	<0.3	Vertical Delineation	Auger Refusal
GS-06 W	8/16/2022		0	2	Pasture	64	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-08	8/16/2022		0	1.5	Pasture	48	<20	<30	<0.05	<0.3	Vertical Delineation	Auger Refusal
GS-10	8/16/2022		0	2	Pasture	560	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-10	8/16/2022		2	4	Pasture	992	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-10	8/16/2022	4.5			Pasture	128	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-10	8/16/2022	5.5			Pasture	80	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-10 E	8/16/2022		0	2	Pasture	48	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-12	8/16/2022		0	2	Pasture	272	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-12	8/16/2022		2	4	Pasture	1360	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-12	8/16/2022	4.5			Pasture	1680	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-12	8/16/2022	5.5			Pasture	608	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-12	8/16/2022	6.5			Pasture	128	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-13 W	8/16/2022		0	2	Pasture	48	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-15	8/15/2022		0	2	Pasture	96	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-15	8/15/2022		2	4	Pasture	448	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-15	8/15/2022	4.5			Pasture	1360	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-15	8/15/2022	5.5			Pasture	2290	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-15	8/15/2022	6.5			Pasture	3600	<20	<30	<0.05	<0.3	Vertical Delineation	Auger Refusal
GS-15 E	8/15/2022		0	2	Pasture	64	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-20 W	8/15/2022		0	2	Pasture	32	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-24	8/15/2022		0	2	Pasture	256	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-24	8/15/2022		2	4	Pasture	1570	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-24	8/15/2022	4.5			Pasture	2700	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-24	8/15/2022	5.5			Pasture	1680	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-24	8/15/2022	6.5			Pasture	816	<20	<30	<0.05	<0.3	Vertical Delineation	Auger Refusal

September 27, 2022

Table A
Summary of Analytical

Incident ID: nAPP2209827356
Par Three NGL Riser
AEP #: 20220402-2300-water

Sample ID	Date	Discrete Depth (Feet)	Top Depth (Feet)	Bottom Depth (Feet)	Surface Use	Chloride (mg/kg)	GRO+DRO (mg/kg)	TPH Ext. (mg/kg)	Benzene (mg/kg)	BTEX (mg/kg)	Comments	Notes
NMOCD Closure Criteria												
0 - 4 feet & "not in-use"						600	--	100	10	50		
> 4 ft or "in-use"						600	100	100	10	50		
GS-31	8/15/2022		0	2	Pasture	464	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-31	8/15/2022		2	4	Pasture	1260	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-31	8/15/2022	4.5			Pasture	1820	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-31	8/15/2022	5.5			Pasture	288	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-31	8/15/2022	6.5 B			Pasture	224	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-31	8/15/2022	6.5 A			Pasture	96	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-33 E	8/15/2022		0	2	Pasture	288	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-33 E	8/15/2022		2	4	Pasture	1180	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-33 E	8/15/2022	4.4			Pasture	112	<20	<30	<0.05	<0.3	Horizontal Delineation	Auger Refusal
GS-36 S	8/15/2022		0	2	Pasture	48	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-39	8/15/2022		0	2	Pasture	48	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-39	8/15/2022		2	4	Pasture	32	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-39	8/15/2022	4.5			Pasture	560	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-39	8/15/2022	5.5			Pasture	1010	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-39	8/15/2022	6.5			Pasture	736	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-39	8/15/2022	7.5			Pasture	96	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-40 E	8/12/2022		0	2	Pasture	48	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-43	8/12/2022		0	2	Pasture	80	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-46	8/15/2022		0	2	Pasture	32	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-47 SW	8/12/2022		0	2	Pasture	64	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-49	8/12/2022		0	2	Pasture	608	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-49	8/12/2022		2	4	Pasture	1600	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-49	8/12/2022	4.5			Pasture	80	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-53	9/15/2022		0	2	Pasture	112	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-53	9/15/2022		2	4	Pasture	1120	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-53	9/15/2022	4.5			Pasture	1120	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-54	8/12/2022		0	2	Pasture	48	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-55	9/15/2022		0	2	Pasture	1800	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-55	9/15/2022		2	4	Pasture	80	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-55 N	9/15/2022		0	2	Pasture	<16	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-56	9/15/2022		0	2	Pasture	<16	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-57	8/12/2022		0	2	Pasture	32	<20	<30	<0.05	<0.3	Vertical Delineation	

September 27, 2022

Table A
Summary of Analytical

Incident ID: nAPP2209827356
Par Three NGL Riser
AEP #: 20220402-2300-water

Sample ID	Date	Discrete Depth (Feet)	Top Depth (Feet)	Bottom Depth (Feet)	Surface Use	Chloride (mg/kg)	GRO+DRO (mg/kg)	TPH Ext. (mg/kg)	Benzene (mg/kg)	BTEX (mg/kg)	Comments	Notes
NMOCD Closure Criteria												
0 - 4 feet & "not in-use"						600	--	100	10	50		
> 4 ft or "in-use"						600	100	100	10	50		
GS-58	9/15/2022		0	2	Pasture	1440	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-58	9/15/2022		2	4	Pasture	592	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-58	9/15/2022	4.5			Pasture	64	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-58 S	8/12/2022		0	2	Pasture	224	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-58 S	8/12/2022		2	4	Pasture	128	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-58 S	8/12/2022	4.5			Pasture	80	<20	<30	<0.05	<0.3	Horizontal Delineation	
GS-59	8/12/2022		0	2	Pasture	96	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-59	8/12/2022		2	4	Pasture	320	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-59	8/12/2022	4.5			Pasture	416	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-59	8/12/2022	5.5			Pasture	400	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-59	8/12/2022	6.5			Pasture	128	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-59	8/12/2022	7.5			Pasture	224	<20	<30	<0.05	<0.3	Vertical Delineation	
GS-59 S	8/12/2022		0	2	Pasture	80	<20	<30	<0.05	<0.3	Horizontal Delineation	
Excceds Closure Criteria												

Photos

Excavated area along pipeline ROW viewing west from east edge of release extent at sample point GS-03.1 E.

Photo 2925 viewing south along an unmapped drainage in the northern quarter of the subject area. Release extent was confined within the drainage. Caliche dominates the drainage bottom.

Photo 2926 viewing north along unmapped drainage near the central portion of the subject release. Release was confined within the drainage.

Photo 2927 viewing southwest near the central portion of the release area at a point where an unmapped drainage terminates into a slightly sloping surface. Healthy vegetation dominates the release area.

Photo 2928 viewing northwest along an unmapped drainage near the southern extent of the subject area. The release extent was confined within the drainage. Healthy vegetation dominates the banks and surrounds.

Photo 2929 viewing northwest near the southern extent of the release extent. The unmapped drainage is bounded by healthy vegetation.

Photo 2930 viewing north into the subject area. Dense vegetation obscures the mapped "intermittent stream" and provided habitat for wildlife. Photo was taken from the far southeast release extent near sample location GS-58 S.

Photo 2931 viewing north near the southern portion of the subject area. The release extent extended beyond the drainage into the surrounding pasture land. Vegetation naturally recovered from the release.

Photo 2932 viewing north along an unmapped drainage near the southern quarter of the subject release. Hard caliche dominates the drainage bottom. Healthy vegetation stabilized the drainage banks.

Photo 2933 viewing north where the mapped "intermittent stream" crosses the release extent near the center portion of the release. The release extent extended beyond the drainage into the pastureland. Vegetation dominates the release area demonstrating that natural attenuation is occurring.

Appendix A

Well Logs

Atkins
ENGINEERING ASSOCIATES INC.

2904 W 2nd St.
Roswell, NM 88201
voice: 575.624.2420
fax: 575.624.2421
www.atkinseng.com

July 8, 2022

DII-NMOSE
1900 W 2nd Street
Roswell, NM 88201

Hand Delivered to the DII Office of the State Engineer

Re: Well Record CP-1919 Pod-1

To whom it may concern:

Attached please find a well log & record and a plugging record, in duplicate, for a one (1) soil borings, CP-1919 Pod-1.

If you have any questions, please contact me at 575.499.9244 or lucas@atkinseng.com.

Sincerely,

Lucas Middleton

Enclosures: as noted above

OSE DII SEP 30 2022 AM10:58

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD-1	n/a	CP-1919

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Ameredev Operating, LLC	737-300-4700

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
2901 Via Fortuna Suite 600	Austin	TX	78746

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	10	8.46	N
	LONGITUDE	103	18	40.42	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

NW L4 Sec.31 T24S R36S NMPM

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
9/20/22	9/20/2022	temporary well material	±101	n/a

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): n/a

DATE STATIC MEASURED: 9/26/2022

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	101	±6.25"	Boring-HSA	--	--	--	--

OSE DII SEP 30 2022 AM10:58

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	7	7	Caliche, with sand, White / Brown	Y ✓ N	
7	30	23	Sand, very fine-grained, poorly graded, with caliche, White	Y ✓ N	
30	101	71	Sand, fine-grained, poorly graded, slight cemented layers, Tan	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
			OSE DII SEP 30 2022 AM 10:58	Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Temporary well material removed and soil boring backfilled using drill cuttings from total depth to ten feet below ground surface(bgs), then hydrated bentonite chips ten feet bgs to surface.
DTW-01

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge, Cameron Pruitt

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 9/29/2022

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: CP-1919

Well owner: Ameredev Operating, LLC Phone No.: 737-300-4700

Mailing address: 2901 Via Fortuna Suite 600

City: Austin State: Texas Zip code: 78746

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Jackie D. Atkins (Atkins Engineering Associates Inc.)

2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Shane Eldridge, Cameron Pruitt

4) Date well plugging began: 9/26/2022 Date well plugging concluded: 9/26/2022

5) GPS Well Location: Latitude: 32 deg, 10 min, 8.46 sec
Longitude: 103 deg, 18 min, 40.42 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 101 ft below ground level (bgl), by the following manner: water level probe

7) Static water level measured at initiation of plugging: n/a ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 9/12/2022

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

OSE OIT SEP 30 2022 AM 10:59

Version: September 8, 2009
Page 1 of 2

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
	0-10' Hydrated Bentonite	Approx. 15 gallons	15 gallons	Augers	
	10'-101' Drill Cuttings	Approx. 145 gallons	145 gallons	Boring	

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MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Jackie D. Atkins, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Jack Atkins — Signature of Well Driller

9/29/2022 — Date

Version: September 8, 2009
Page 2 of 2

2_CP-1919_WellLog-packet-forsign-DTW-1

Final Audit Report 2022-09-29

Created:	2022-09-29
By:	Lucas Middleton (lucas@atkinseng.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAADfQXFqE5RRxScAG5FWRU5klJ1m2bXeDK

"2_CP-1919_WellLog-packet-forsign-DTW-1" History

Document created by Lucas Middleton (lucas@atkinseng.com)
2022-09-29 - 9:20:23 PM GMT- IP address: 64.17.71.25

Document emailed to Jack Atkins (jack@atkinseng.com) for signature
2022-09-29 - 9:21:22 PM GMT

Email viewed by Jack Atkins (jack@atkinseng.com)
2022-09-29 - 9:23:30 PM GMT- IP address: 64.90.153.232

Document e-signed by Jack Atkins (jack@atkinseng.com)
Signature Date: 2022-09-29 - 9:23:50 PM GMT - Time Source: server- IP address: 64.90.153.232

Agreement completed.
2022-09-29 - 9:23:50 PM GMT

OSE DFT SEP 30 2022 AM10:59

Adobe Acrobat Sign

IMPORTANT — READ INSTRUCTIONS ON BACK BEFORE FILLING OUT THIS FORM.

586646

Declaration of Owner of Underground Water Right

Declaration No. CP-180 Book CP-1 Date received January 4, 1966

I, W.D. Dinwiddie being first duly sworn upon my oath, depose and say that the following is a full and complete statement prepared in accordance with the instructions on the reverse side of this form and submitted in evidence of ownership of a valid underground water right, that I have carefully read each and all of the items contained therein and that the same are true to the best of my knowledge and belief.

W.D. Dinwiddie
declarant.

Subscribed and sworn to before me this 3rd day of Jan A.D. 1966

My commission expires MY COMMISSION EXPIRES FEBRUARY 28, 1967

Notary Public

STATEMENT

1. Name of water right owner W.D#.Dinwiddie
of Box 302-----Jal, New Mexico
County of Lea, State of New Mexico.
2. Source of water supply Shallow Water
(state whether artesian or shallow water basin)
located in # Capitan Underground Water Basin
(name of underground stream, valley, artesian basin, etc.)
3. The well is located in the Center NW¼ ## NE ¼, SW ¼
of section 6, Township 25 So., Range 36 E, N.M.P.M.
on land owned by
4. Description of well: date drilled 1960 driller Oren Musslewhite depth 605 feet.
diameter (outside) of casing 6" inches; original flow gal. per min.;
present flow 5 gal. per min.; ~~maximum~~ present pumping lift 350 feet;
make and type of pump Aeromotor Windmill
make, type, horsepower, etc., of power plant Windmill
Fractional or percentage interest claimed in well All
5. Quantity of water appropriated and beneficially used
(feet depth or acre feet per acre)
for Commercial and Livestock purposes.
6. Acreage actually irrigated and with water right acres,
located and described as follows (describe only lands actually irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
Well # 8					
center NW¼--NE¼--SW¼	6	25 So.	36 E		W.D.Dinwiddie

(Note: location of well and acreage actually irrigated must be shown on plat on reverse side.)

7. Water was first applied to beneficial use 1960 and since that time has been used fully and continuously on all of the above described lands or for the above described purposes except as follows: Drilling and livestock

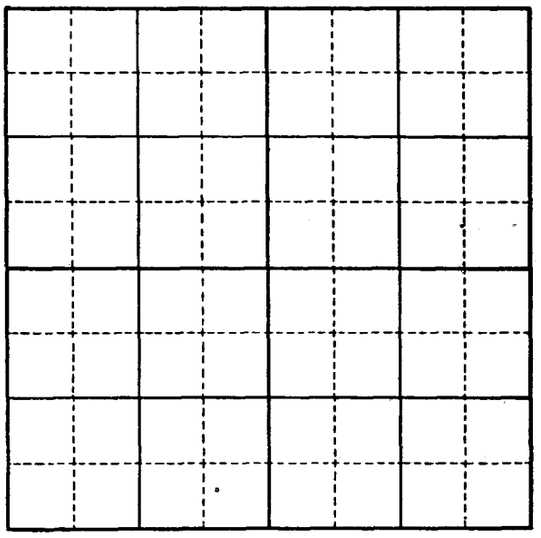
8. Additional statements or explanations

STATE ENGINEER OFFICE SANTA FE, N.M. JAN 10 AM 9:32

POD Renumbered From: CP - 00180 To: CP-00180-POD1

Locate well and areas actually irrigated as accurately as possible on following plat:

Section (s) ....., Township ....., Range ..... N. M. P. M.



INSTRUCTIONS

Declaration shall be executed (preferably typewritten) in triplicate and must be accompanied by a **$1.00 filing** fee. Each of triplicate copies must be properly signed and attested.

A separate declaration must be filed for each well in use.

All blanks shall be filled out fully. Required information which cannot be sworn to by declarant shall be supplied by affidavit of person or persons familiar with the facts and shall be submitted herewith.

Secs. 1-3. Complete all blanks.

Sec. 4. Fill out all blanks applicable as fully as possible.

Sec. 5. Irrigation use shall be stated in feet depth or acre feet of water per acre applied on the land. If used for domestic, municipal. or other purposes, state total quantity in acre feet used annually.

Sec. 6. Describe only the acreage actually irrigated. When necessary to clearly define irrigated acreages, describe to nearest 2½ acre subdivision. If located on unsurveyed lands. describe by legal supdivision "as projected" from the nearest government survey corners, or describe by metes and bounds and tie survey to some permanent, easily-located natural object.

Sec. 7. Explain and give dates as nearly as possible of any years when all or part of acreage claimed was not irrigated.

Sec. 8. If well irrigates or supplies supplemental water to any other land than that described above, or if land is also irrigated from any other source, explain under this section. Give any other data necessary to fully describe water right.

If additional space is necessary, use a separate sheet or sheets and attach securely hereto.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 166023

CONDITIONS

Operator: AMEREDEV OPERATING, LLC 2901 Via Fortuna Austin, TX 78746	OGRID: 372224
	Action Number: 166023
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Chloride Capture Remediation Plan Approved with Conditions. OCD approves variance to analyze only for chloride. Semi-annual monitoring must be confirmed with laboratory analyzed samples at 500 ft2.	1/10/2023