March 6, 2020

NCS2003549670 Closure Report
Ike's Recycling Containment #1

Prepared for
Ameredev Operating, LLC
Austin, Texas

Prepared by
R.T. Hicks Consultants, Ltd.
Albuquerque, New Mexico

C-141

Closure Form and Report

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NCS2003549670
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Ameredev Operating, LLC	OGRID 372224
Contact Name Shane McNeely	Contact Telephone 737-300-4729
Contact email smcneely@ameredev.com	Incident # *(assigned by OCD)* NCS2003549670
Contact mailing address 5707 Southwest Pkwy, Bldg 1. Austin, TX 78735	

Location of Release Source

Latitude 32.0202198 Longitude -103.2608245
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Ike's Recycling Containment #1	Site Type Recycling Containment
Date Release Discovered 12/18/2019 at 14:00hrs	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
D	27	26S	36E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: Washington Crossing Field Serv. LLC (Amerdev)*)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 21.5 (see attached calc)	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release: Valve on water transport truck become disconnected while filling the west above ground recycling containment.		

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Produced water soaked into the production pad upon release. Excavation of impacted material began on the morning of Dec. 19, 2019. Material was transported to an approved disposal facility.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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 on the behalf of Amerdev Operating Title: ___Sr. Env. Specialist_____

Signature: _____ Date: __12/20/2019_

email: __andrew@rthicksconsult.com_____ Telephone: ___970-570-9535_____

OCD Only

Received by: _____ Date: 2/4/2020

Ameredev Operating
Ike's Recycling Containment #1

Spill Dimensions to Volume of Release

Input	Area	[feet^2]	2294.0
	Area	[yrds^2]	254.9
Input	Depth of impacted area	[feet]	1.50
Input	Porosity: typically is .35 to .40 for most soils	[-]	0.35

Output	volume of affected soil	[feet^3]	**3441.0**

Input	Proportion of porosity filled with release fluid [0,1]	[-]	0.10

Output	volume of fluid	[feet^3]	**120.4**
		[gal]	**900.9**
		Barrels	21.5

Incident ID	NCS2003549670
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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	163 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? **Plate 6**	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? **Plate 6**	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? **Plate 7**	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? **Plate 5**	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? **Plates 5 & 6**	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? **Plate 5**	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland? **Plate 8**	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine? **Plate 9**	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology? **Plate 10**	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain? **Plate 11**	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site? **(Plate 2a & 2b)**	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

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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 on the behalf of Amerdev Operating Title: ___Sr. Env. Specialist_____

Signature: _____ Date: __03/06/2020

email: __andrew@rthicksconsult.com_____ Telephone: ___970-570-9535_____

OCD Only

Received by: Cristina Eads Date: 04/14/2020

State of New Mexico
Oil Conservation Division

Incident ID	NCS2003549670
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 on the behalf of Amerdev Operating Title: ___Sr. Env. Specialist_____

Signature: _____ Date: __03/06/2020_

email: __andrew@rthicksconsult.com_____ Telephone: ___970-570-9535_____

OCD Only

Received by: Cristina Eads Date: 04/14/2020

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

Signature: _____ Date: 05/26/2020

State of New Mexico
Oil Conservation Division

Incident ID	NCS2003549670
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: __Andrew Parker on the behalf of Amerdev Operating Title: ___Sr. Env. Specialist_____

Signature: _____ Date: __03/06/2020_

email: __andrew@rthicksconsult.com_____ Telephone: ___970-570-9535_____

OCD Only

Received by: Cristina Eads Date: 05/26/2020

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996
▲ Carlsbad ▲ Durango ▲ Midland

March 6, 2020

NMOCD District 1 (vacant)
District 1 - HOBBS
1625 N. French Drive
Hobbs, New Mexico 88240
Submitted via portal

RE: NCS2003549670 - Characterization and Closure Report
Ike's Recycling Containment #1
Ameredev Operating, LLC

NMOCD:

R.T. Hicks Consultants submits this characterization, remediation and closure report on the behalf of Ameredev Operating, LLC.

The release occurred on 12/18/2019 at 14:00 hours on surface owned by Washington Crossing Field Serv. LLC (Amerdev). The cause of the release was due to a valve on a water transport truck that became disconnected while filling an Above Ground Recycling Containment.

Excavation of impacted soil began on December 19, 2019 and was completed on December 21, 2019.

The C-141 including the Characterization, Remediation, and Closure Forms is attached.

We respectfully ask NMOCD for:

- Deferment approval along the walls of a recycling containment and secondary containment, and
- Closure of the regulatory file for the non-deferred area.

Hick Consultants relied on 19.15.29 NMAC for characterization, remediation, and closure reporting for the above referenced release.

The location of the release is 32.020198, - 103.2608245 (Latitude/Longitude; NAD 83); Unit Letter D, Sec 27, T26S., R36E; Lea County.

The release occurred within silty sands with a hard caliche layer at 4.0 to 4.5 feet below ground surface. The top 8 inches consisted of an active production pad.

The report is divided into three sections:

I. Initial Response
II. Characterization
III. Remediation and Closure

Plates

- Plate 1 - Release Relative to Excavation Extent
- Plate 2a – Base Sample Chloride Concentrations
- Plate 2b – Wall Sample Chloride Concentrations
- Plate 3 – Depth to Water
- Plate 4 – Potentiometric Surface
- Plates 5 through 11 – As labeled on the C-141 Characterization Checklist

Tables

- Table 1 – Nearby OSE Well Summary
- Table 2 – Final Excavation Confirmation Sampling Data

Appendices

- Appendix A – OSE Well Logs
- Appendix B - Laboratory Certificate of Analyses

I. Initial Response

The release occurred on December 18, 2019. A valve on a water transport truck become disconnected while filling an Above Ground Recycling Containment. The release extent is shown on Plate 1.

Twenty-one and one-half (21.5) barrels of produced water was released and none was recovered. Excavation of the release began on December 19, 2019. Excavated material was transported to an approved disposal facility.

Results of the confirmation soil sampling is discussed in *Section II.5 Soil Waste Characteristics*.

Figure 1: Release extent viewing north toward recycling AST. A secondary containment is visible photo right. Date/Time: 2019-12-18 15:36:42. GPS: 32.0203528 N , 103.2607889 W

II. Characterization

The following sections address items as described in 19.15.29.11.A, paragraphs 1- 4. Please refer to the C-141 characterization checklist for additional setback criteria and verification (Plate 3-11).

1. Site Map

Horizontal extent of the release was determined by visual observations. Plate 1 shows the release and excavation extent relative to pipelines, a recycling containment, a tank battery and a secondary containment.

Plate 2a shows base sample grid relative to release and excavation extent, as well as corresponding electrical conductivity and chloride concentrations.

Plate 2b shows wall sample grid relative to release and excavation extent, as well as corresponding electrical conductivity and chloride concentrations.

2. Depth to Ground Water

Most recent depth to water data was queried from the USGS and New Mexico Office of the State Engineer (OSE) online databases (Plate 3). OSE well logs are located in Appendix A. Spatial analysis shows:

- The closest water well is approximately 0.5-miles to the southeast with a depth to water of 139.98 feet.
- The depth to the water-bearing zone averages 319 feet for wells located 2-miles to the WSW (Table 1). The average depth to water in the well cluster is 299 feet.
- USGS-14912 located in the same cluster has a reported depth to water of 194.41 feet.

Ground water flow is to the south-southwest as demonstrated on the potentiometric surface map (Plate 4). We relied on USGS Open File Report – 95 (OFR-95) potentiometric surface map to determine direction of ground water flow and calculated depth to water at the release location.

The potentiometric surface indicates that the depth to water is approximately 163 feet below ground surface, where 163 feet = 2903 ft surface elevation – 2740 ft potentiometric surface.

3. Wellhead Protection Area

Plate 5 shows that the release extent is <u>not</u>:

- Within incorporated municipal boundaries or within a defined municipal fresh water well field.
- Within ½-mile private and domestic water sources (wells and springs).
- Within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes
- Within 1000 feet of any other fresh water well or spring

4. Distance to Nearest Significant Water Course

Plate 6 shows that the release extent is not:

- Within ½ mile of any significant water course.
- Within 300 feet of a continuously flowing watercourse or any other significant watercourse.
- Within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

5. Soil/Waste Characteristics

The release occurred in an area where depth to water is greater than 100 ft below ground surface (bgs) and on an active production pad.

Ameredev Operating, LLC restored the surface according to Closure Criteria listed in Table 1 of 19.15.29 NMAC. With a depth to water >100 feet, closure criteria limits are:

Table 1 19.15.29 NMAC		Chloride	GRO+DRO	TPH+Ext	BTEX	Benzene
DTW > 100ft		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Closure Criteria	0-4 ft (not in-use)	600	1,000	2,500	50	10
Closure Criteria	>4 ft or "in-use"	20,000	1,000	2,500	50	10

Excavation of the release started within 24hours of release discovery. Therefore, no initial characterization was performed.

Table 2 shows the analytical results of confirmation sampling. The Laboratory Certificate of Analyses are located in Appendix B.

Release excavation and hand auger investigations show the lithology as:

0 - 0.7 ft: production pad
0.7 - 4.0 ft silty sand
4.5 ft (total depth) – Caliche

III. Remediation and Closure

1. Excavation Protocol

All surfaces were remediated in accordance with 19.15.29.13 NMAC with the exception of:

- A 30-foot long section underneath the recycling AST's south wall. Walls W-04 and W-05 (Plate 2b), and
- A 20-foot section underneath a secondary containment. Wall W-06 (Plate 2b).

Excavation of the base and walls continued until field screening of electrical conductivity (EC) was between 0.2 and 0.3 dS/m. EC readings were measured using a saturated paste in a 1-part soil to 5-parts distilled water solution ($EC_{1:5}$). A Hanna DiST 4 EC Tester was used to record measurements.

As shown below (Figure 2), EC < 0.2 dS/m correlates with a chloride concentration <600 mg/kg.

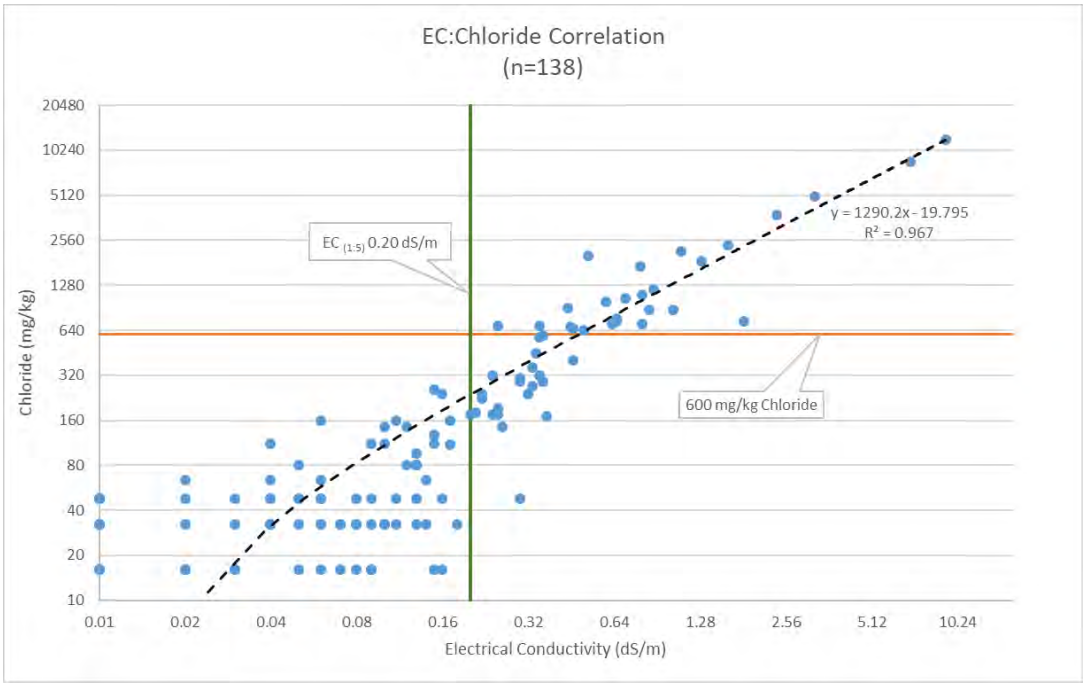

Figure 2: Electrical Conductivity to Chloride correlation. Data collected by R.T. Hicks Consultants containing 138 sample points (n=138). Root Mean Square = 0.97.

Plate 2a shows the sample grid for base samples. A 5-point composite sample was collected from each grid for confirmation sampling. Five-point composite sample points were evenly spaced within each sample grid to obtain a representative sample of the area (Figure 3, below example).

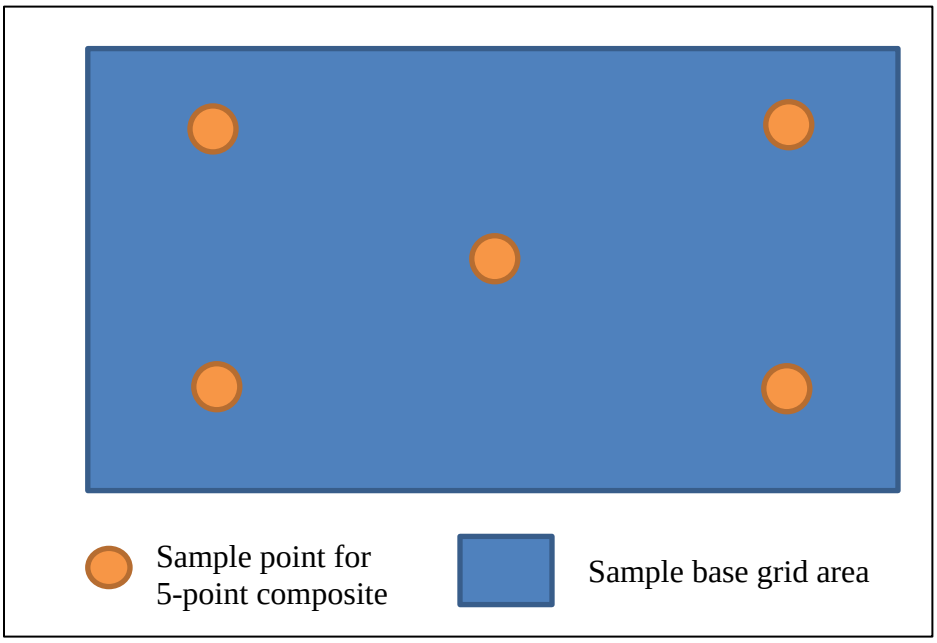

Figure 3: Example of 5-point sample grid for composite sampling.

Five-point composite soil samples were collected along the walls of the excavation as shown on Plate 2b. Sample points for the composite wall sample were evenly distributed along the wall to obtain a representative 5-point composite sample. Samples were collected from the surface to 4-feet or excavation base depth, whichever is less. If excavation depth was greater than 4-feet, an additional confirmation sample was obtained below 4-feet.

If soil confirmation sampling exceeded 19.15.29 NMAC Table 1 Closure Criteria concentrations, excavation continued in areas of concern until soil confirmation results were below Closure Criteria, except in three requested deferral areas, discussed below.

Excavated material was transported to an approved disposal facility. Clean backfill and caliche material was imported to restore the surface to an active production pad.

2. Remediation Activities

The excavation extent is irregular in shape and covers a surface area of 254 square yards with an excavated volume of approximately 127 cu. yards.

Table 2 is a summary of analytical of confirmation sampling, where

- Representative samples were analyzed for BTEX, Benzene, and TPH. All representative samples were below laboratory detection levels for hydrocarbons.
- All base samples exhibit chloride concentrations below 19.15.29 NMAC Table 1 Closure Criteria.
- Wall sample W-03 exceeded 600 mg/kg. Therefore, wall W-03 was extended west an additional 3-feet (W-03+3W). During excavation $EC_{(1:5)}$ measurements were 0.2 dS/m and no composite soil sample was collected for confirmation. On February 12, 2020, we obtained a 5-point hand auger sample of the wall area according to GPS[1] coordinates and visual observation of remediation extent still visible on the production pad.
- Five of the eight wall samples are below 19.15.29 NMAC Table 1 Closure Criteria for chloride. The three remaining wall sample areas are below production equipment. Deferral of the wall areas are discussed below.

Walls W-04 and W-05 are along the recycling AST's south wall. Wall W-06 is along a secondary containment (Figure 4, below). Chloride concentrations at the walls from the surface to excavation base depth (1.5 to 2 feet) exceeds 19.15.29 Table 1 Closure Criteria for chloride. Remediation beyond the current extent of the walls would cause a major facility deconstruction per 19.15.29.12.C(2):

> *If contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration and reclamation may be deferred with division written approval until the equipment is removed during other operations…*

[1] Release and remediation extents are mapped with a Juniper Geode GPS antenna with a <30 cm horizontal RMS accuracy.

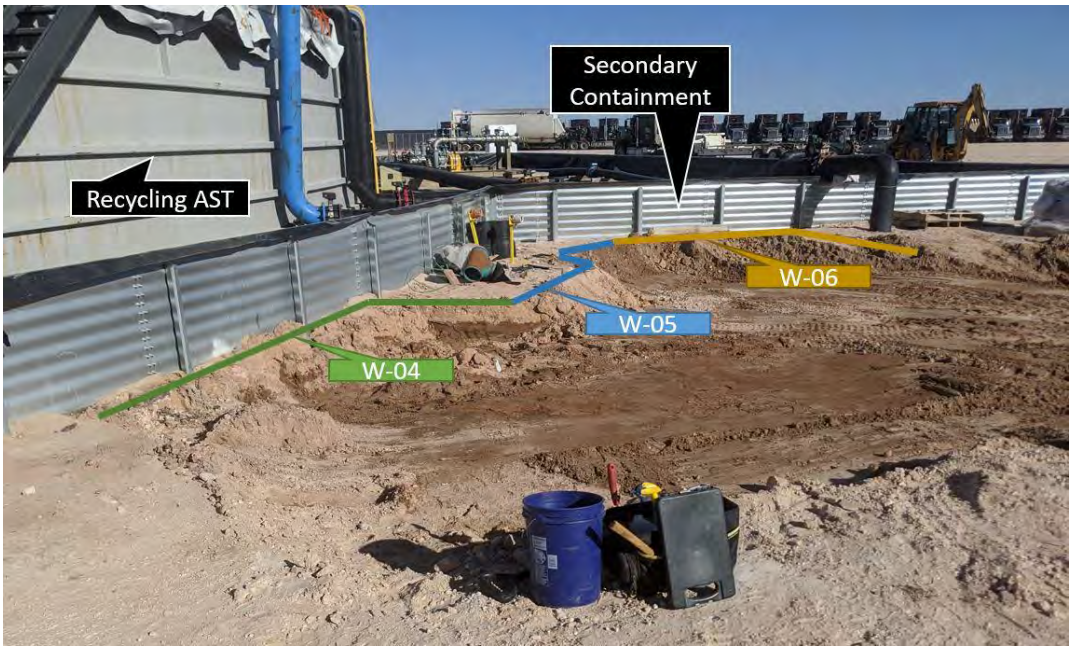

Figure 4: Photo of wall deferral locations along recycling and secondary containments. Date/Time: 2019-12-20 13:54:43. GPS: 32.0205694 N , 103.2609444 W

Therefore, we ask NMOCD for deferment of these three areas. Final remediation and reclamation of these three areas shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC after the production equipment is decommissioned and is no longer used for oil and gas operations.

Below is photo documentation of excavation prior to backfilling (Figures 5 & 6).

Figure 5: Photograph of excavation viewing north prior to backfilling. Date: 2019-12-20 13:53:30. GPS: 32.0205694 N , 103.2609444 W

Figure 6: Photograph of excavation viewing southwest prior to backfilling. Date: 2019-12-20 13:55:22. GPS: 32.0205694 N , 103.2609444 W.

Below is photo documentation of excavation after backfilling (Figure 7).

Figure 7: Photo of backfill and restoration of active production pad. Photo is viewing southeast from wall W-02 were the wall cross a pipeline. Date: 2019-12-21 12:45:00. GPS: 32.0205667 N , 103.2611111 W

Please contact me with any questions at andrew@rthicksconsult.com or 970-570-9535.

Sincerely,
R.T. Hicks Consultants, Ltd.

Andrew Parker
Sr. Env. Specialist

Copy: Shane McNeely (smcneely@ameredev.com) Ameredev Operating, LLC

Plates

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

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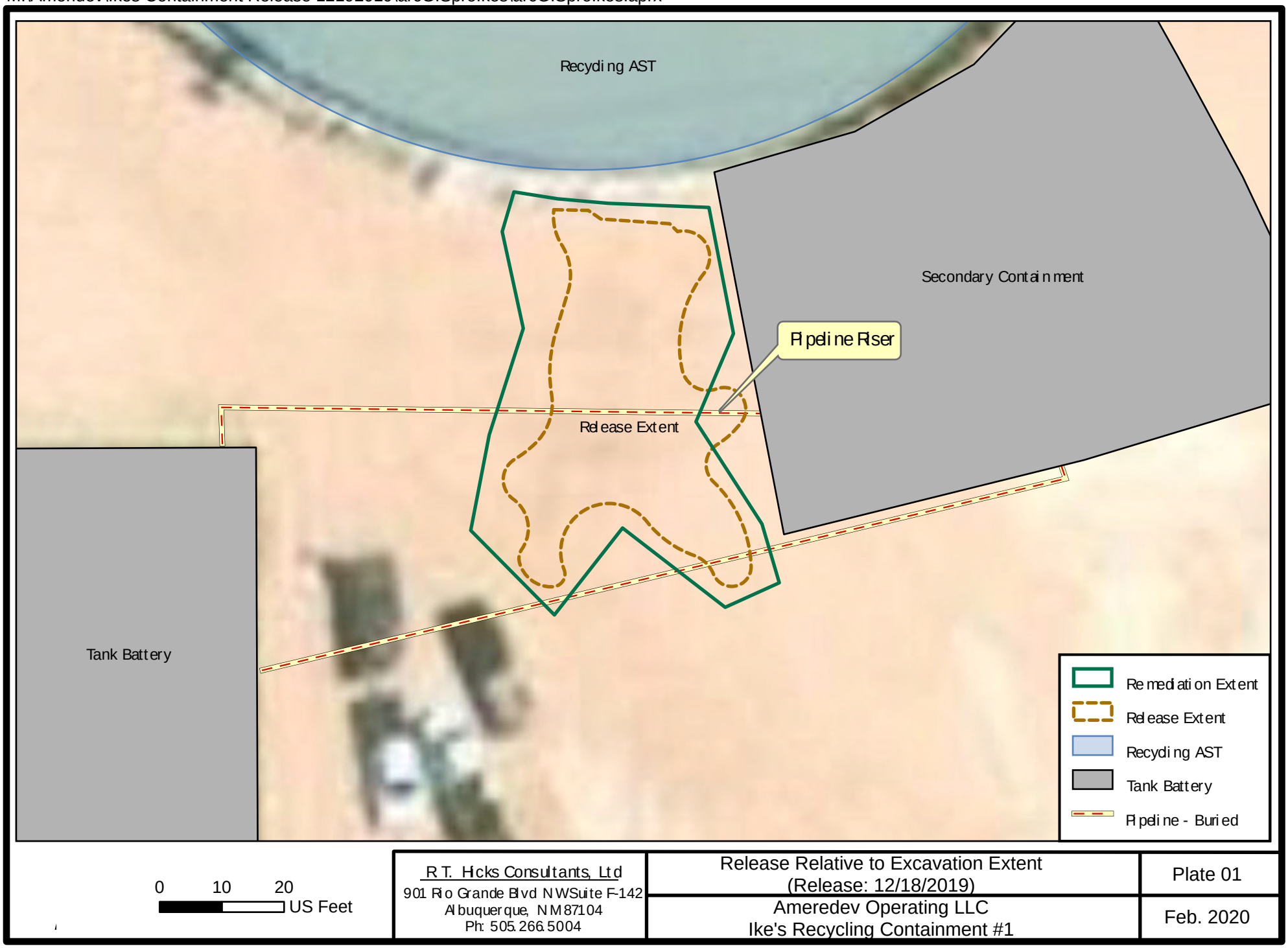

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Release Relative to Excavation Extent (Release: 12/18/2019)	Plate 01
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

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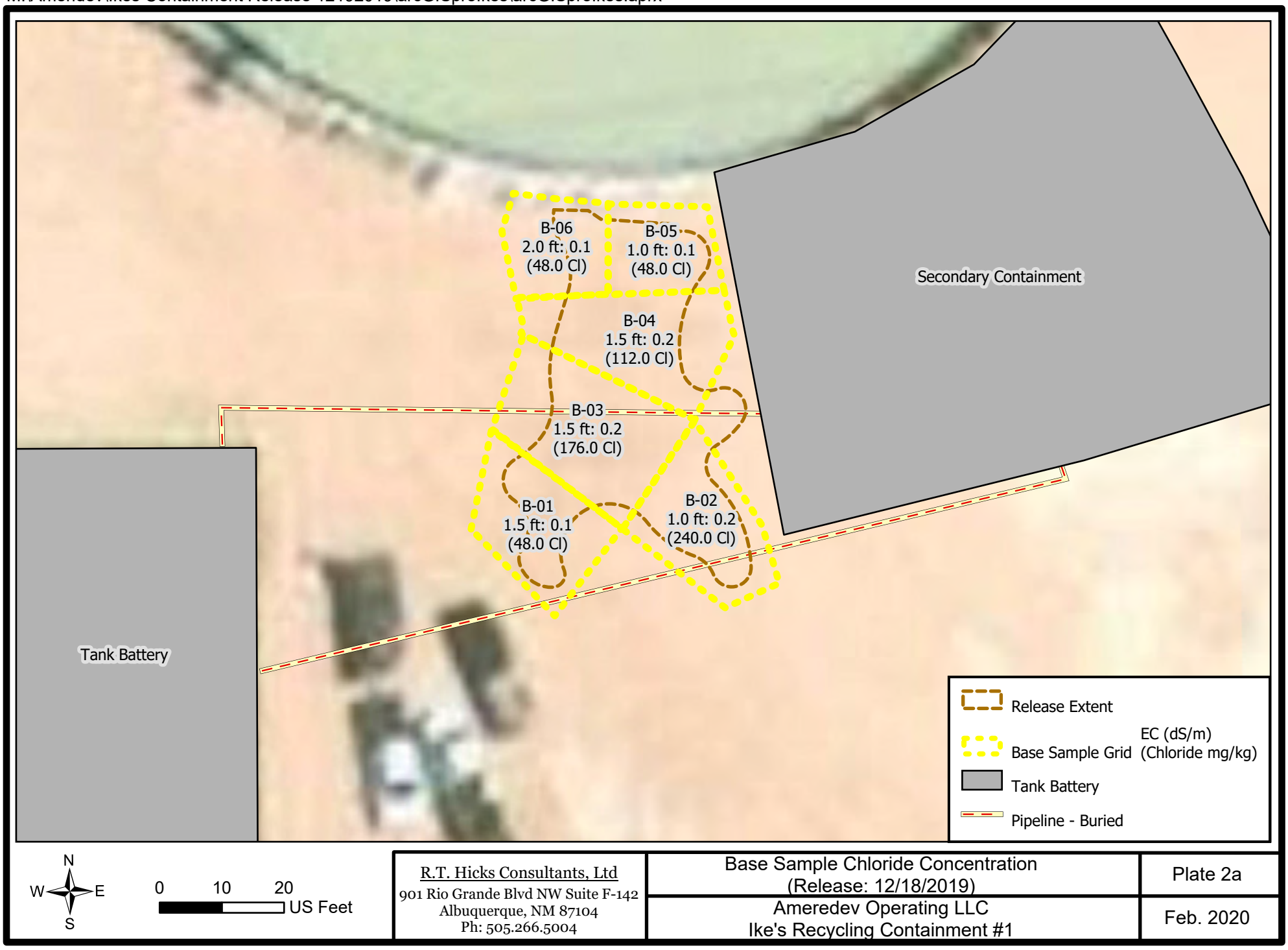

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Base Sample Chloride Concentration (Release: 12/18/2019)	Plate 2a
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

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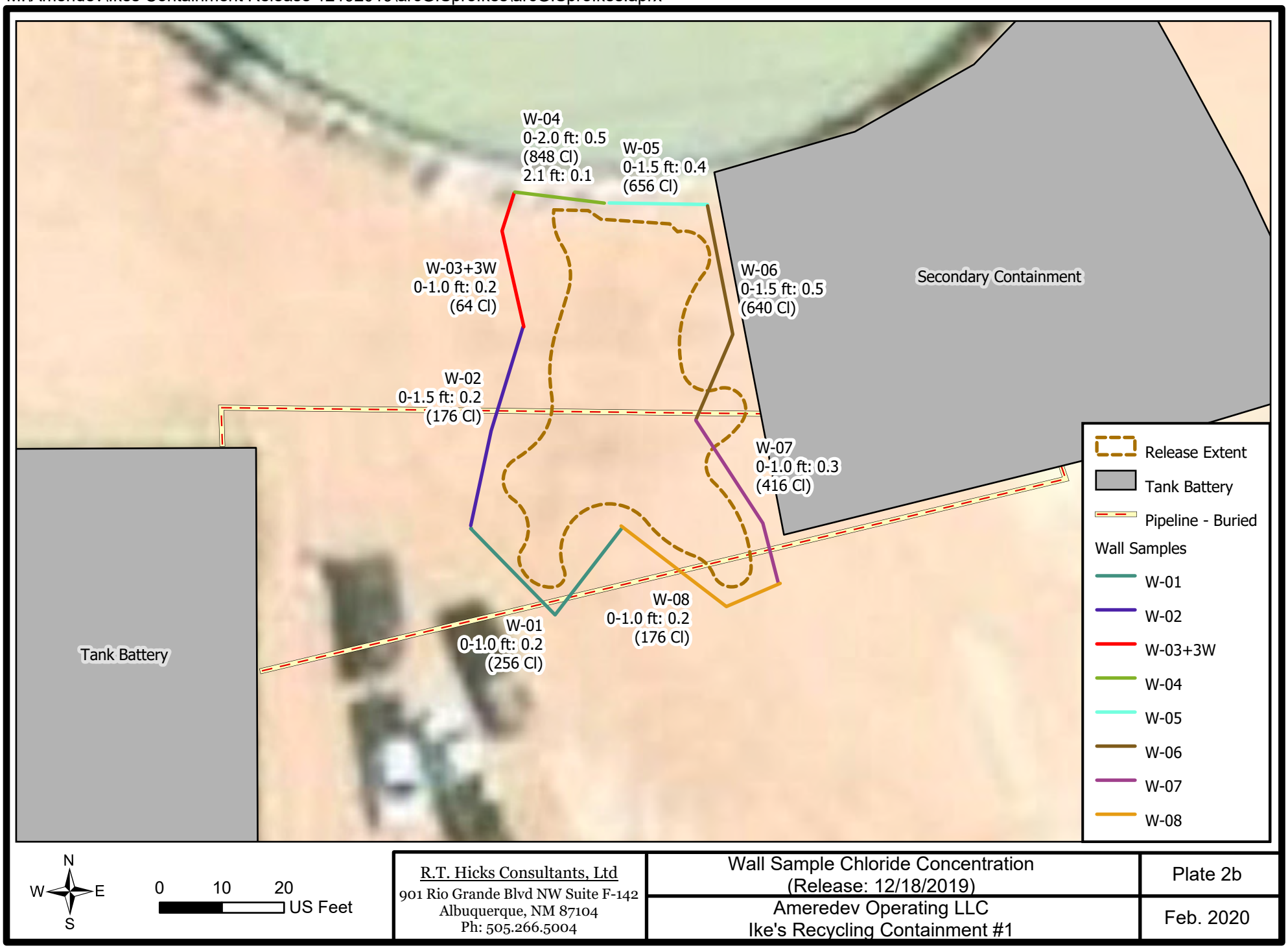


R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

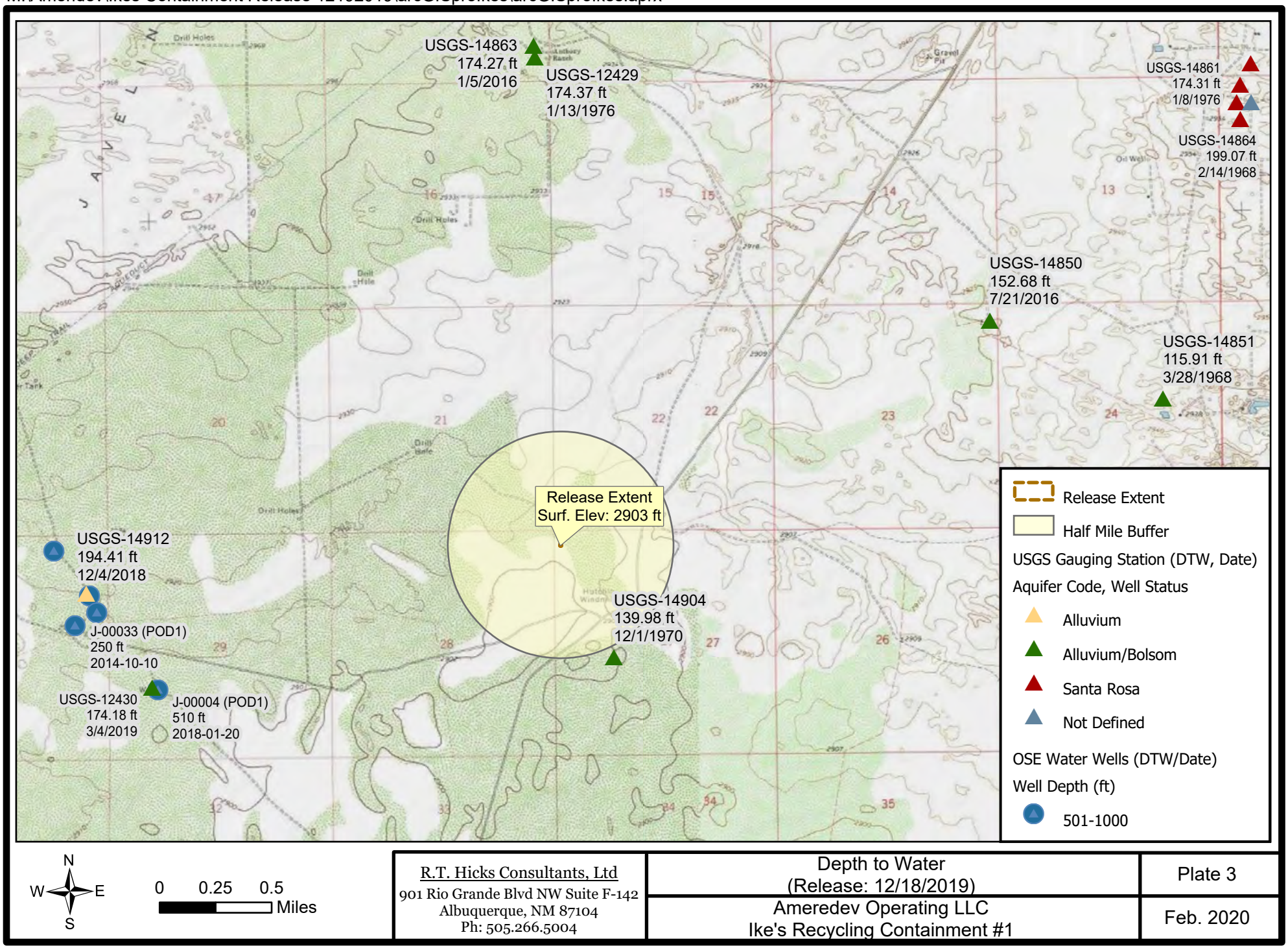
Wall Sample Chloride Concentration
(Release: 12/18/2019)

Plate 2b

Ameredev Operating LLC
Ike's Recycling Containment #1

Feb. 2020

M:\Ameridev\Ikes Containment Release 12192019\arcGISproIkes\arcGISproIkes.aprx



R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Depth to Water
(Release: 12/18/2019)

Ameredev Operating LLC
Ike's Recycling Containment #1

Plate 3

Feb. 2020

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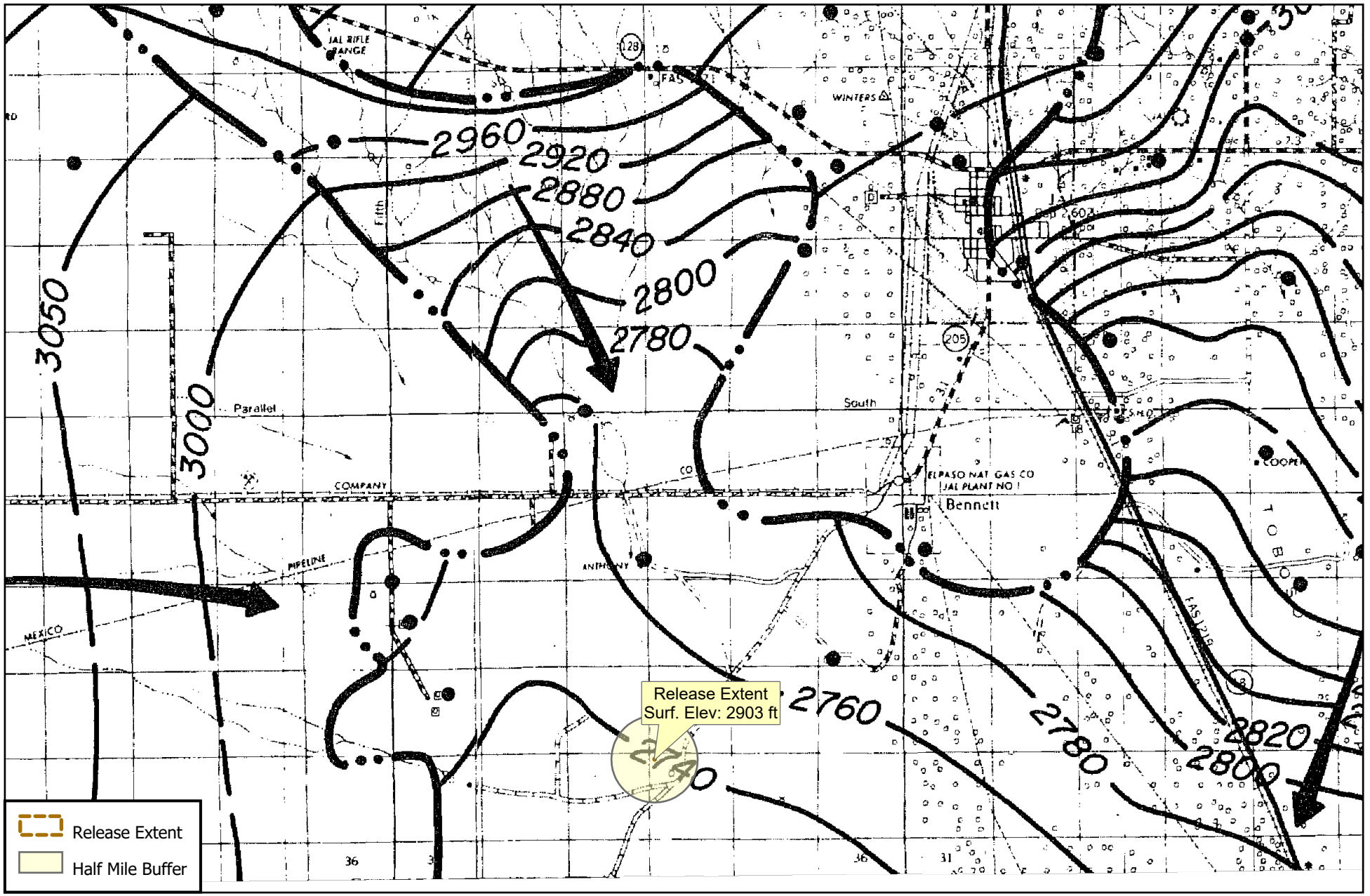
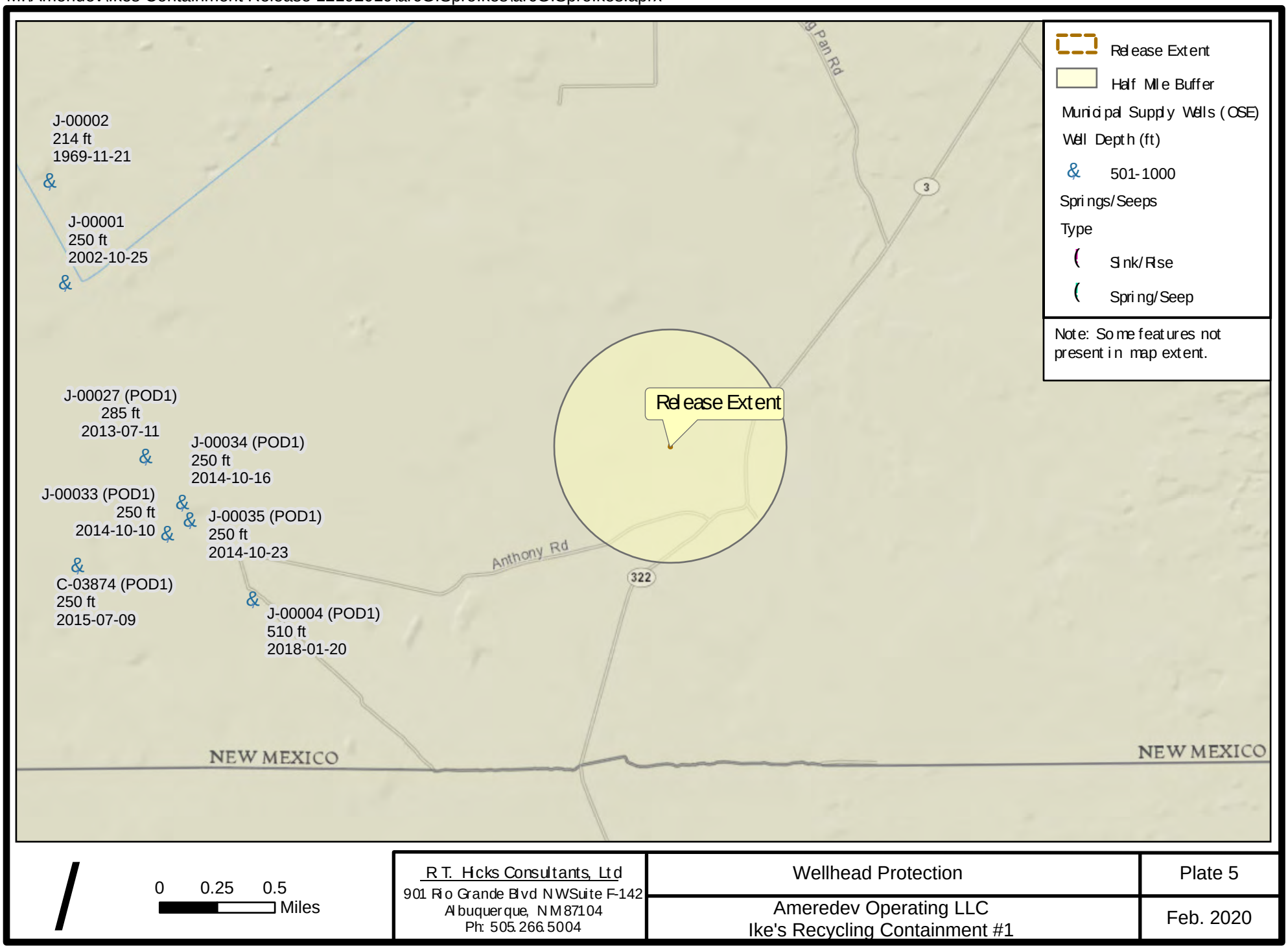


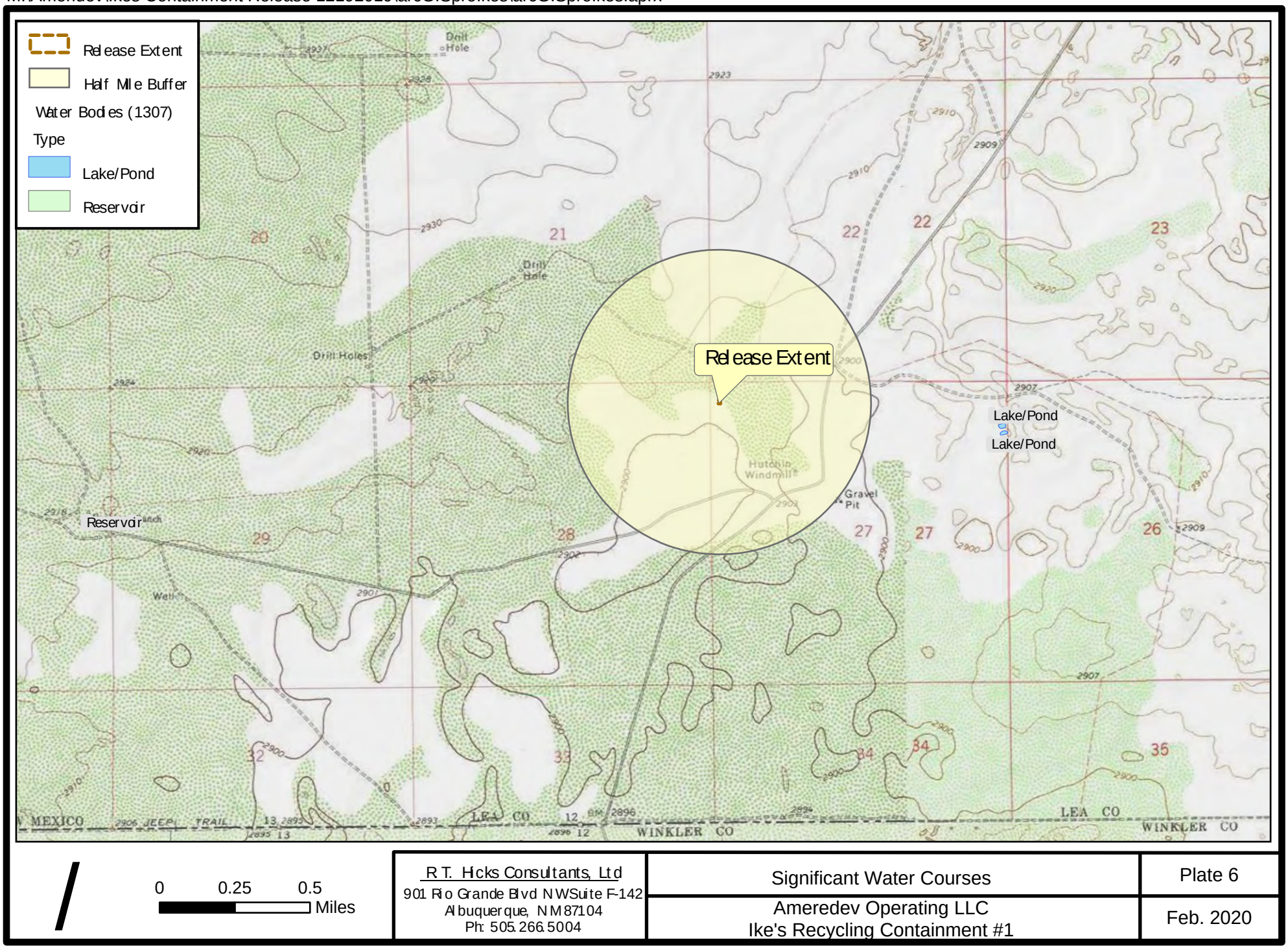
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Potentiometric Surface (Source: USGS OFR95) Ameredev Operating LLC Ike's Recycling Containment #1	Plate 4 Feb. 2020

M:\Ameridev\Ikes Containment Release 12192019\arcGISProIkes\arcGISProIkes.aprx



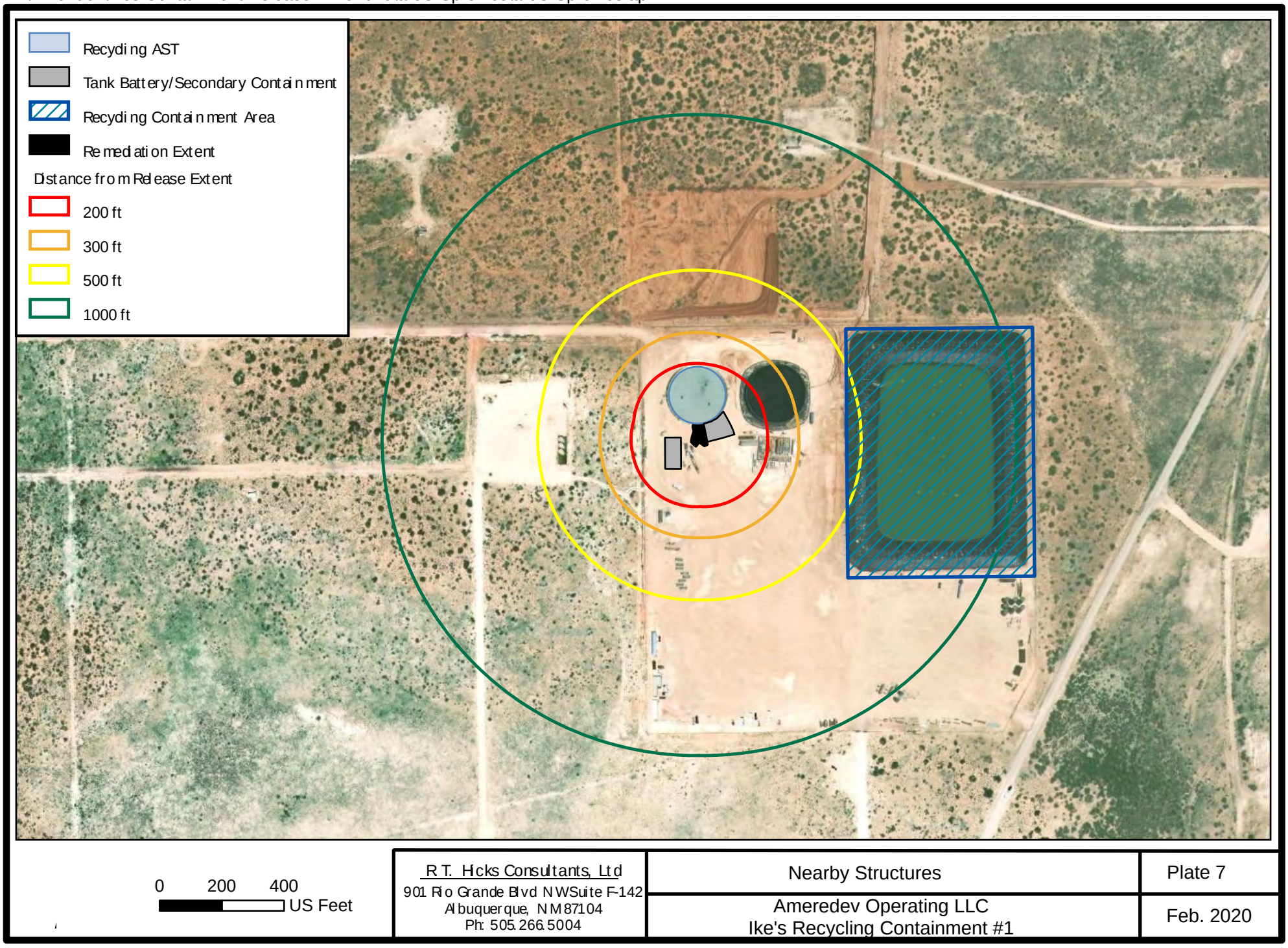
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Wellhead Protection	Plate 5
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

M:\Ameridev\Ikes Containment Release 12192019\arcGISproIkes\arcGISproIkes.aprx



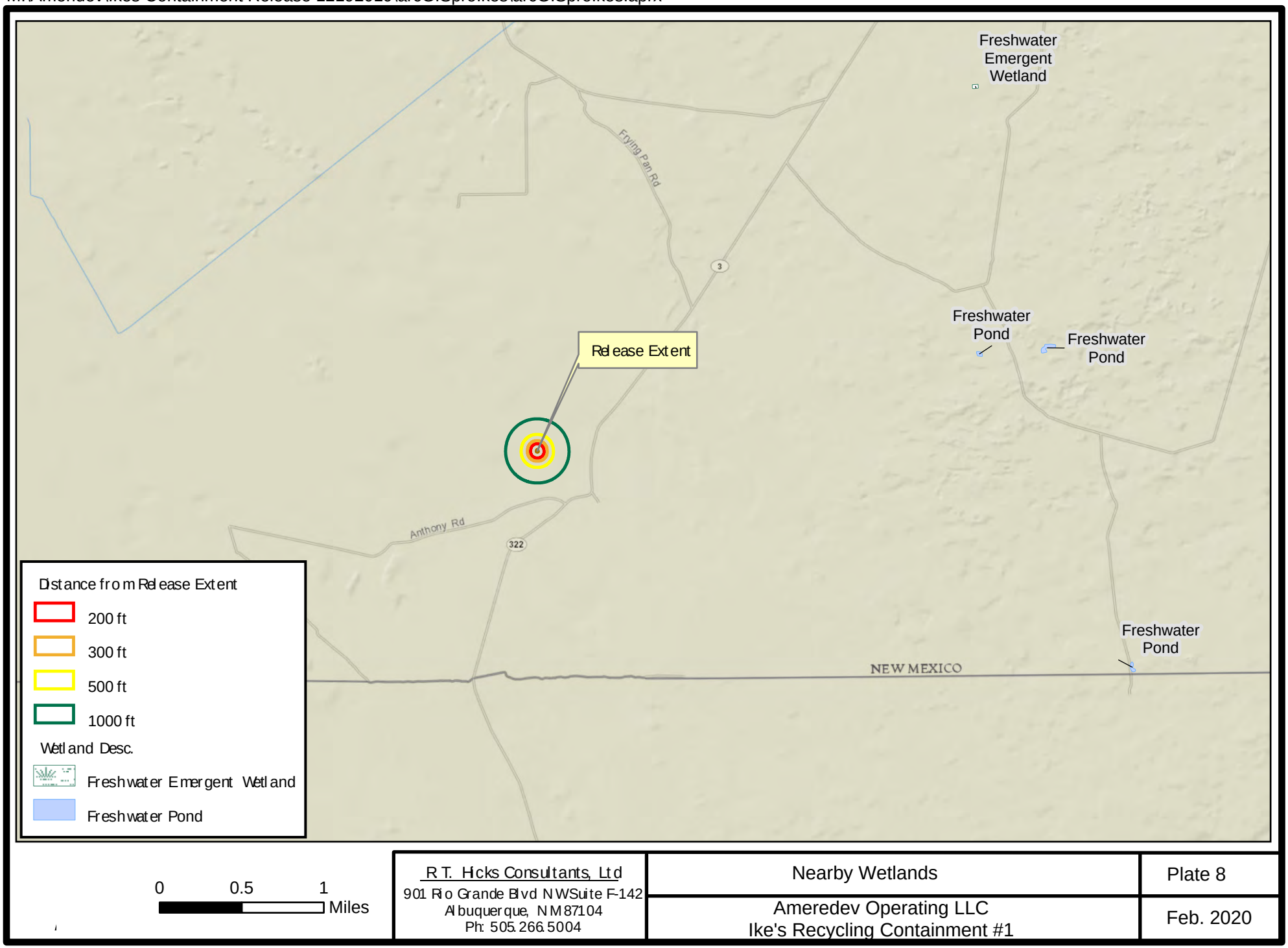
R T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Significant Water Courses Ameredev Operating LLC Ike's Recycling Containment #1	Plate 6 Feb. 2020

M:\Ameridev\Ikes Containment Release 12192019\arcGISproIkes\arcGISproIkes.aprx



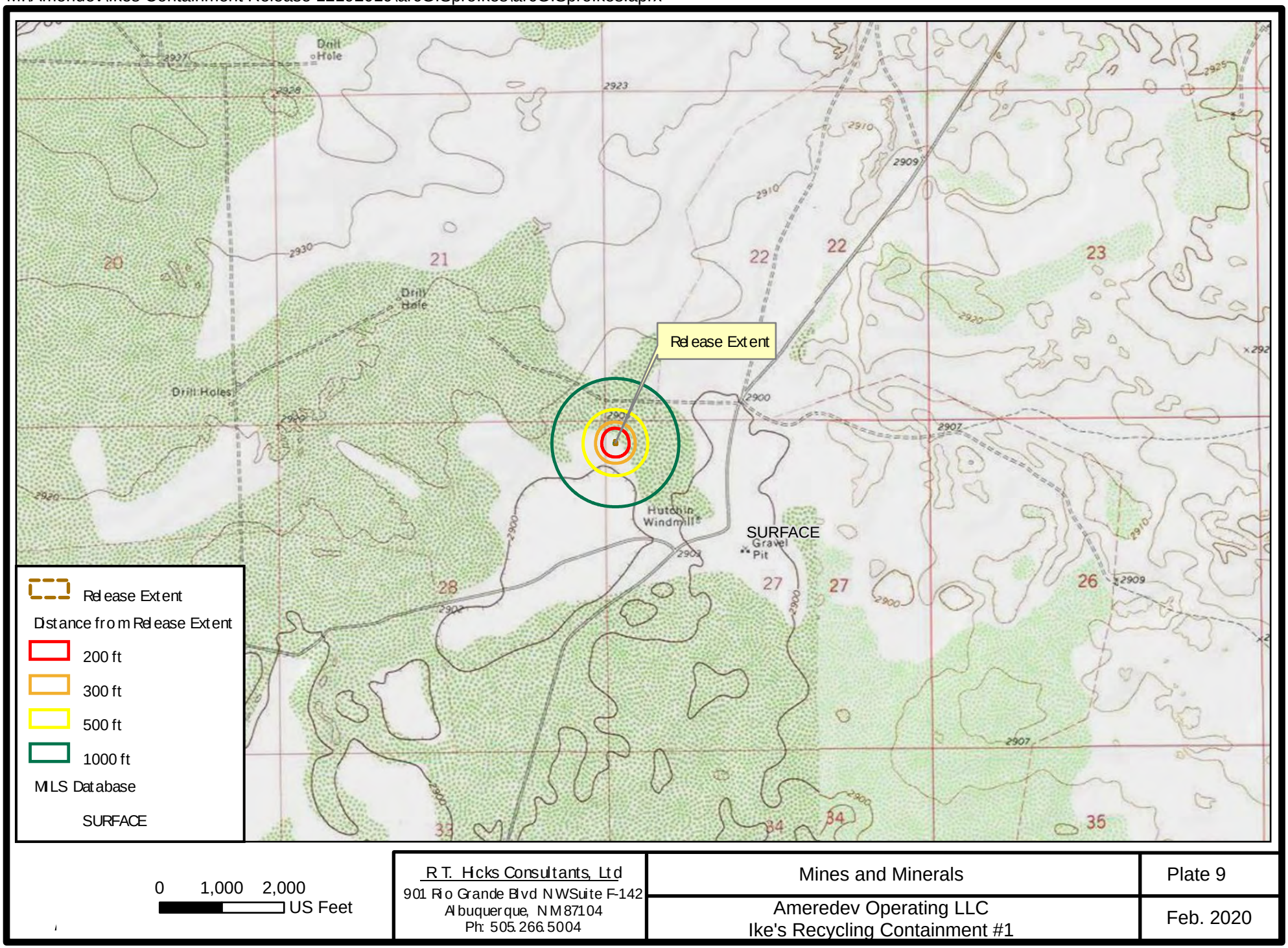
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures	Plate 7
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

M:\Ameridev\Ikes Containment Release 12192019\arcGISProIkes\arcGISProIkes.aprx



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wetlands	Plate 8
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

M:\Ameridev\Ikes Containment Release 12192019\arcGISproIkes\arcGISproIkes.aprx



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Mines and Minerals	Plate 9
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

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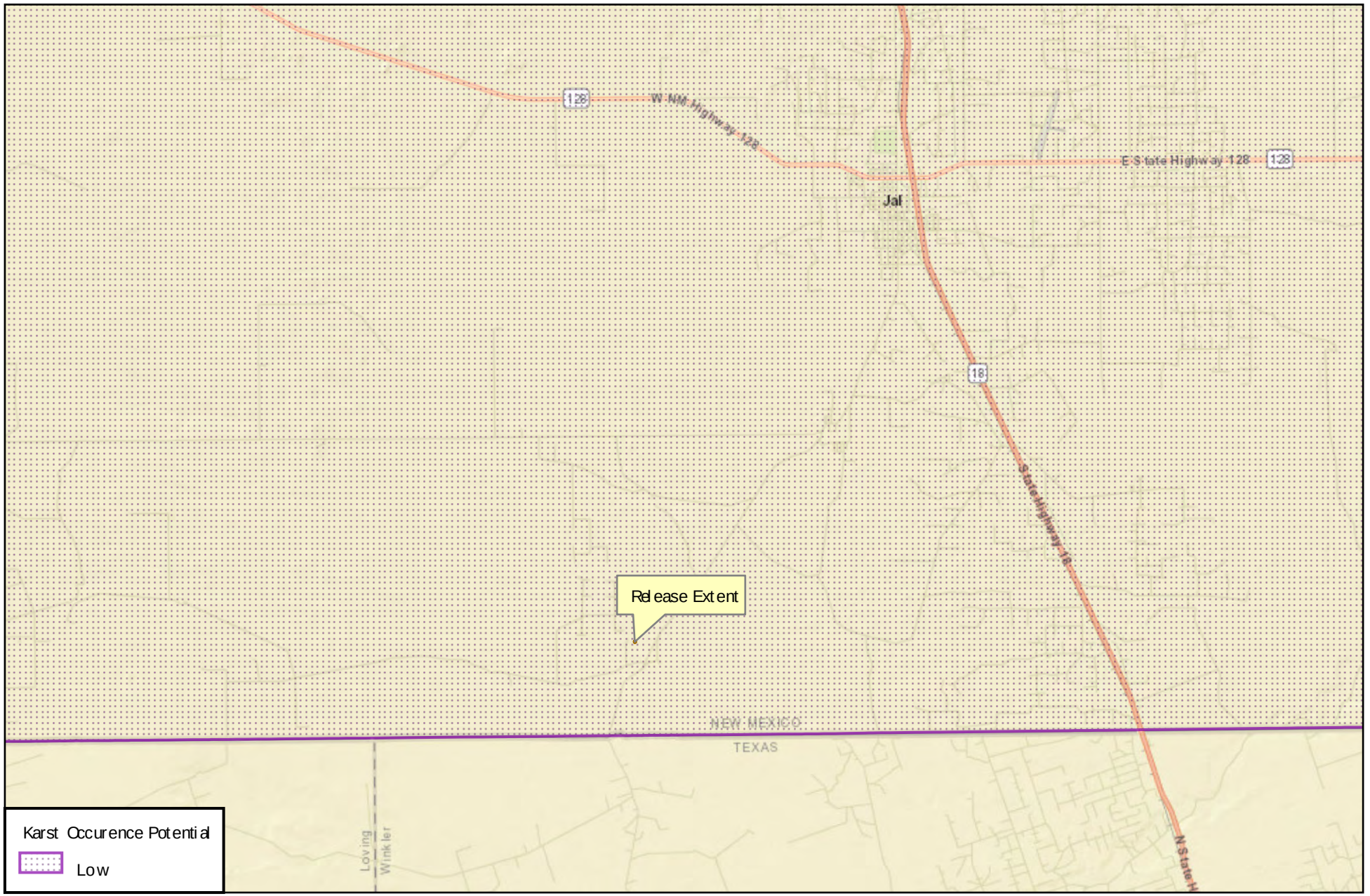
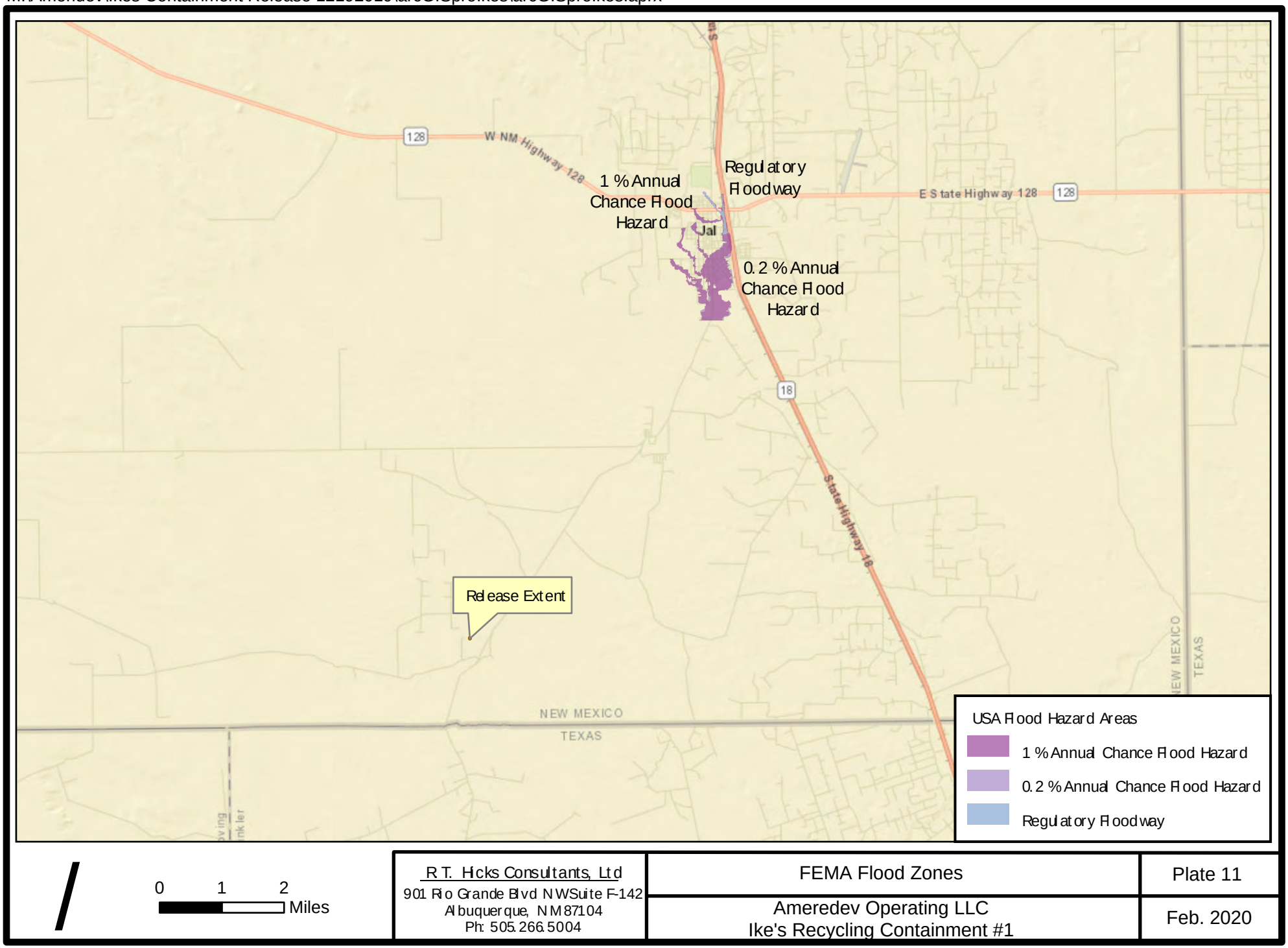


R T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Karst	Plate 10
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

M:\Ameridev\Ikes Containment Release 12192019\arcGISproIkes\arcGISproIkes.aprx



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	FEMA Flood Zones	Plate 11
	Ameredev Operating LLC Ike's Recycling Containment #1	Feb. 2020

Tables

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

February 2020

Table 1
OSE Water Well Log Data Summary

Ameredev Ike's Containment Release
NCS2003549670
Advance Energy Partners Hat Mesa, LLC

POD Number	Date	Top of Water Bearing Strata	Bottom of Water Bearing Strata	Depth to Water	Source
		Feet	Feet	Feet	
J-00027 (POD1)	7/11/2013	285	548	285	Shallow
J-00034 (POD1)	10/16/2014	325	500	250	Shallow
J-00035 (POD1)	10/23/2014	365	480	250	Shallow
J-00033 (POD1)	10/10/2014	255	515	250	Shallow
C-03874 (POD1)	7/9/2015	195	572	250	Shallow
J-00004 (POD1)	1/20/2018	490	604	510	Shallow
	Average of all	319	537	299	

February 2020

Table 2
Summary of Analytical

Ike's Recycling Containment #1
Ameredev Operating, LLC

Sample ID	Date	Location (Wall/Base)	Discrete Depth (Feet)	Top Depth (Feet)	Bottom Depth (Feet)	In Use (Yes/No)	EC (field) dS/m	Chloride (PPM)	GRO+DRO (PPM)	TPH Ext. (PPM)	Benzene (PPM)	BTEX (PPM)	Comments
NMOCD Closure Criteria													
0 - 4 feet & "not in-use"								600	--	2,500	10	50	
> 4 ft or "in-use"								20,000	1,000	2,500	10	50	
B-01	12/20/2019	Base	1.5			Yes	0.10	48	<20	<30	<0.05	<0.3	
B-02	12/20/2019	Base	1.0			Yes	0.21	240					
B-03	12/20/2019	Base	1.5			Yes	0.17	176					
B-04	12/20/2019	Base	1.5			Yes	0.20	112	<20	<30	<0.05	<0.3	
B-05	12/20/2019	Base	1.0			Yes	0.09	48					
B-06	12/20/2019	Base	2.0			Yes	0.13	48					
W-01	12/21/2019	Wall		0.0	1.0	Yes	0.24	256	<20	<30	<0.05	<0.3	
W-02	12/21/2019	Wall		0.0	1.5	Yes	0.20	176					
W-03	12/21/2019	Wall		0.0	1.0	Yes	0.67	1120	<20	<30	<0.05	<0.3	removed
W-03+3W	2/12/2020	Wall		0.0	1.0	Yes	0.20	64					
W-04	12/21/2019	Wall		0.0	2.0	Yes	0.48	848					Defer
W-04	12/20/2019	Wall	2.1			Yes	0.13						
W-05	12/21/2019	Wall		0.0	1.5	Yes	0.43	656					Defer
W-06	12/21/2019	Wall		0.0	1.5	Yes	0.48	640	<20	<30	<0.05	<0.3	Defer
W-07	12/21/2019	Wall		0.0	1.0	Yes	0.34	416					
W-08	12/21/2019	Wall		0.0	1.0	Yes	0.20	176					

Appendix A

OSE Well Logs

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	(NAD83 UTM in meters) X	Y
	J 00034 POD1	2	4	2	30	26S	36E	660869	3543643

x

Driller License: 1607 **Driller Company:** DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date: 10/14/2014 **Drill Finish Date:** 10/16/2014 **Plug Date:**

Log File Date: 12/15/2014 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 120 GPM

Casing Size: 6.00 **Depth Well:** 506 feet **Depth Water:** 250 feet

x

Water Bearing Stratifications:	Top	Bottom	Description
	325	350	Sandstone/Gravel/Conglomerate
	380	465	Sandstone/Gravel/Conglomerate
	471	500	Sandstone/Gravel/Conglomerate

x

Casing Perforations:	Top	Bottom
	245	505

x

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	J 00033 POD1	2	4	2	30	26S	36E	660767	3543426

x

Driller License: 1607 **Driller Company:** DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date: 10/03/2014 **Drill Finish Date:** 10/10/2014 **Plug Date:**

Log File Date: 02/19/2015 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 43 GPM

Casing Size: 8.00 **Depth Well:** 551 feet **Depth Water:** 250 feet

x

Water Bearing Stratifications:	Top	Bottom	Description
	255	287	Shale/Mudstone/Siltstone
	377	465	Sandstone/Gravel/Conglomerate
	500	515	Sandstone/Gravel/Conglomerate

x

Casing Perforations:	Top	Bottom
	230	550

x

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Twp	Rng	(NAD83 UTM in meters) X	Y
	J 00027 POD1	1	2	2	30	26S	36E	660612	3543961

x

Driller License:	1682	**Driller Company:**	HUNGRY HORSE, LLC.		
Driller Name:	JOHN NORRIS				
Drill Start Date:	07/04/2013	**Drill Finish Date:**	07/11/2013	**Plug Date:**	
Log File Date:	10/16/2013	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	12.00	**Depth Well:**	571 feet	**Depth Water:**	285 feet

x

Water Bearing Stratifications:	Top	Bottom	Description
	285	325	Sandstone/Gravel/Conglomerate
	367	393	Sandstone/Gravel/Conglomerate
	430	446	Sandstone/Gravel/Conglomerate
	465	487	Sandstone/Gravel/Conglomerate
	523	548	Sandstone/Gravel/Conglomerate

x

Casing Perforations:	Top	Bottom
	0	571

x

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	J 00004 POD1	4	1	3	29	26S	36E	661366	3542970

x

Driller License:	1638	**Driller Company:**	U.S. GEOLOGICAL SURVEY		
Driller Name:	EMAN, JEFFREY				
Drill Start Date:	01/16/2018	**Drill Finish Date:**	01/20/2018	**Plug Date:**	
Log File Date:	02/16/2018	**PCW Rcv Date:**	03/26/1973	**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	5.00	**Depth Well:**	510 feet	**Depth Water:**	510 feet

x

Water Bearing Stratifications:	Top	Bottom	Description
	490	525	Sandstone/Gravel/Conglomerate
	575	604	Sandstone/Gravel/Conglomerate

x

Casing Perforations:	Top	Bottom
	468	500

x

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	C 03874 POD1	2	2	3	30	26S	36E	660141	3543200

x

Driller License: 1607 **Driller Company:** DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date: 07/06/2015 **Drill Finish Date:** 07/09/2015 **Plug Date:**

Log File Date: 07/13/2015 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 400 GPM

Casing Size: 10.00 **Depth Well:** 575 feet **Depth Water:** 250 feet

x

Water Bearing Stratifications:	Top	Bottom	Description
	195	245	Sandstone/Gravel/Conglomerate
	245	383	Sandstone/Gravel/Conglomerate
	415	572	Sandstone/Gravel/Conglomerate

x

Casing Perforations:	Top	Bottom
	255	575

x

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	J 00035 POD1	2	4	2	30	26S	36E	660923	3543521

x

Driller License: 1607 **Driller Company:** DURAN DRILLING

Driller Name: DURAN, LUIS (TONY)

Drill Start Date: 10/20/2014 **Drill Finish Date:** 10/23/2014 **Plug Date:**

Log File Date: 12/15/2014 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 115 GPM

Casing Size: 6.00 **Depth Well:** 506 feet **Depth Water:** 250 feet

x

Water Bearing Stratifications:	Top	Bottom	Description
	365	387	Sandstone/Gravel/Conglomerate
	410	450	Sandstone/Gravel/Conglomerate
	457	480	Sandstone/Gravel/Conglomerate

x

Casing Perforations:	Top	Bottom
	185	505

x

Appendix B

Laboratory Certificates of Analyses

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

December 31, 2019

ANDREW PARKER

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: IKE'S CONTAINMENT #1 RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 12/23/19 14:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/20/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: B - 01 1.5' (H904289-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/27/2019	ND	1.96	98.2	2.00	2.43	
Toluene*	<0.050	0.050	12/27/2019	ND	1.87	93.7	2.00	0.933	
Ethylbenzene*	<0.050	0.050	12/27/2019	ND	1.84	91.8	2.00	0.107	
Total Xylenes*	<0.150	0.150	12/27/2019	ND	5.77	96.1	6.00	1.34	
Total BTEX	<0.300	0.300	12/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	12/27/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2019	ND	212	106	200	4.37	
DRO >C10-C28*	<10.0	10.0	12/28/2019	ND	220	110	200	6.65	
EXT DRO >C28-C36	<10.0	10.0	12/28/2019	ND					

Surrogate: 1-Chlorooctane *97.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *106 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/20/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: B - 02 1' (H904289-02)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	12/27/2019	ND	432	108	400	3.77	

Sample ID: B - 03 1.5' (H904289-03)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	12/27/2019	ND	432	108	400	3.77	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/20/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: B - 04 1.5' (H904289-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/27/2019	ND	1.96	98.2	2.00	2.43	
Toluene*	<0.050	0.050	12/27/2019	ND	1.87	93.7	2.00	0.933	
Ethylbenzene*	<0.050	0.050	12/27/2019	ND	1.84	91.8	2.00	0.107	
Total Xylenes*	<0.150	0.150	12/27/2019	ND	5.77	96.1	6.00	1.34	
Total BTEX	<0.300	0.300	12/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	12/27/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2019	ND	212	106	200	4.37	
DRO >C10-C28*	<10.0	10.0	12/28/2019	ND	220	110	200	6.65	
EXT DRO >C28-C36	<10.0	10.0	12/28/2019	ND					

Surrogate: 1-Chlorooctane *95.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *102 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/20/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: B - 05 1' (H904289-05)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	12/27/2019	ND	432	108	400	3.77	

Sample ID: B - 06 2' (H904289-06)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	12/27/2019	ND	432	108	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/21/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: W - 01 0-1' (H904289-07)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/27/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/27/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/27/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/27/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**256**	16.0	12/27/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2019	ND	212	106	200	4.37	
DRO >C10-C28*	<10.0	10.0	12/28/2019	ND	220	110	200	6.65	
EXT DRO >C28-C36	<10.0	10.0	12/28/2019	ND					

Surrogate: 1-Chlorooctane *103 %* *41-142*

Surrogate: 1-Chlorooctadecane *110 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/21/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: W - 02 0-1.5' (H904289-08)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	12/27/2019	ND	432	108	400	3.77	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/21/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: W - 03 0-1' (H904289-09)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/27/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/27/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/27/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/27/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.9 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1120**	16.0	12/27/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2019	ND	212	106	200	4.37	
DRO >C10-C28*	<10.0	10.0	12/28/2019	ND	220	110	200	6.65	
EXT DRO >C28-C36	<10.0	10.0	12/28/2019	ND					

Surrogate: 1-Chlorooctane *98.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *109 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/21/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: W - 04 0-2' (H904289-10)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**848**	16.0	12/27/2019	ND	432	108	400	3.77	

Sample ID: W - 05 0-1.5' (H904289-11)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**656**	16.0	12/27/2019	ND	432	108	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/21/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: W - 06 0-1.5' (H904289-12)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/27/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/27/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/27/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/27/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**640**	16.0	12/27/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/28/2019	ND	212	106	200	4.37	
DRO >C10-C28*	<10.0	10.0	12/28/2019	ND	220	110	200	6.65	
EXT DRO >C28-C36	<10.0	10.0	12/28/2019	ND					

Surrogate: 1-Chlorooctane *101 %* *41-142*

Surrogate: 1-Chlorooctadecane *112 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	12/23/2019	Sampling Date:	12/21/2019
Reported:	12/31/2019	Sampling Type:	Soil
Project Name:	IKE'S CONTAINMENT #1 RELEASE	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDER OPERATION		

Sample ID: W - 07 0-1' (H904289-13)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**416**	16.0	12/27/2019	ND	432	108	400	3.77	

Sample ID: W - 08 0-1' (H904289-14)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	12/27/2019	ND	432	108	400	3.77	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	R.T. Hicks Consultants	**BILL TO**	
Project Manager:	Andrew Parker	**P.O. #:**	
Address:	On-File	**Company:**	R.T. Hicks
City:	**State:** **Zip:**	**Attn:**	Send to
Phone #:	**Fax #:**	**Address:**	ABQ Office
Project #:	**Project Owner:**	**City:**	
Project Name:	~~Am~~ Ike's Containment #1 Relase	**State:** **Zip:**	
Project Location:	Amesedev Operation	**Phone #:**	
Sampler Name:	Jacob Saenz	**Fax #:**	

FOR LAB USE ONLY Lab I.D.	Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	CHLORIDE	TPH (GRO+DRO+MRO)	BENZENE, BTEX
H904289																		
1	B-01	1.5FT	C	1			X					X		12/20/19	1:2pm	X	X	X
2	B-02	1FT	↓	↓			↓					↓		↓	12:30pm	↓		
3	B-03	1.5FT													1pm			
4	B-04	1.5FT													1:30pm		X	X
5	B-05	1FT													2pm			
6	B-06	2FT												↓	2:30pm			
7	W-01	0-1FT												12/21/19	9am		X	X
8	W-02	0-1.2FT													9:30am			
9	W-03	0-1FT												↓	10:30am	↓	X	X
10	W-04	0-2FT	↓	↓			↓					↓			11am			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	**Date:** 12-23-19	**Received By:**	Samara Deleon
	Time: 14:55		
Relinquished By:	**Date:**	**Received By:**	
	Time:		

Delivered By: (Circle One) 0.8° #197
Sampler - UPS - Bus - Other: Corrected 1.2°

Sample Condition Cool: ~~Yes~~ No; Intact: ~~Yes~~ No

CHECKED BY: (Initials) T.C.

Phone Result: ☐ Yes ☐ No **Add'l Phone #:**
Fax Result: ☐ Yes ☐ No **Add'l Fax #:**
REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	R.T. Hicks Consultants	**BILL TO**	
Project Manager:	Andrew Parker	**P.O. #:**	
Address:	On-File	**Company:**	R.T. Hicks
City:	**State:**	**Zip:**	**Attn:** Send to
Phone #:	**Fax #:**	**Address:**	ABQ Office
Project #:	**Project Owner:**	**City:**	
Project Name:	IKe's Containment #1 Release	**State:**	**Zip:**
Project Location:	Ameredev Operation	**Phone #:**	
Sampler Name:	Jacob Saenz	**Fax #:**	

FOR LAB USE ONLY Lab I.D.	Sample I.D.		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	CHLORIDE	TPH (GRO+DRO+MRO)	BENZENE, BTEX
H904289																		
11	W-05	0-1.5 FT	C	1			X					X		12/2/19	11:30am	X		
12	W-06	0-1.5 FT	↓	↓			↓					↓		↓	12pm	↓	X	X
13	W-07	0-1 FT													12:30pm			
14	W-08	0-1 FT													1pm			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	**Date:** 12-23-19	**Received By:**	**Phone Result:** ☐ Yes ☐ No **Add'l Phone #:**
	Time: 14:55		**Fax Result:** ☐ Yes ☐ No **Add'l Fax #:**
Relinquished By:	**Date:**	**Received By:**	**REMARKS:**
	Time:		

Delivered By: (Circle One) 0.8c #97
Sampler - UPS - Bus - Other: Corrected 1.2c

Sample Condition Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No

CHECKED BY: (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 13, 2020

ANDREW PARKER

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: IKE'S #1 RELEASE

Enclosed are the results of analyses for samples received by the laboratory on 02/12/20 16:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

R T HICKS CONSULTANTS
ANDREW PARKER
901 RIO GRANDE BLVD SUITE F-142
ALBUQUERQUE NM, 87104
Fax To: NONE

Received:	02/12/2020	Sampling Date:	02/12/2020
Reported:	02/13/2020	Sampling Type:	Soil
Project Name:	IKE'S #1 RELEASE	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	AMEREDEV OPERATION		

Sample ID: W - 03 + 3W 0-1' (H000427-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: GM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	02/13/2020	ND	432	108	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	RT Hicks Consultants	**BILL TO** P.O. #:	Ike's #1
Project Manager:	Andrew Parker	Company:	RT Hicks
Address:	on-file	Attn:	email to
City:	State: Zip:	Address:	andrew
Phone #:	Fax #:	City:	
Project #:	Project Owner:	State: Zip:	
Project Name:	Ike's #1 Release	Phone #:	
Project Location:	Ameredev	Fax #:	
Sampler Name:	Andrew Parker		

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Chloride
H000427-1	W-03 +3W 0-1 FT	G	1			X							2.12	15:15	X

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Relinquished By: Andrew Parker	Date: 2.12 Time: 16:30	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #: All Results are emailed. Please provide Email address:
Relinquished By:	Date: Time:	Received By:	REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C 19.7 Corrected Temp. °C	Sample Condition Cool Intact ☐ Yes ☑ Yes ☐ No ☐ No	CHECKED BY: (Initials) TO
Turnaround Time: Standard ☑ Rush ☐ Thermometer ID #97 Correction Factor +0.4 °C	Bacteria (only) Sample Condition Cool Intact ☐ Yes ☐ Yes ☐ No ☐ No	Observed Temp. °C Corrected Temp. °C	

FORM-006 R 3.0

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com