November 25, 2019

1RP # Pending
Characterization, Remediation & Closure Report
Wool Head 20 State Com #703H

Prepared for
Advance Energy Partners Hat Mesa LLC
Houston, Texas

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

C-141

Including Closure Form

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

Form C-141
Page 1

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

1RP # Pending

Responsible Party

Responsible Party: Advance Energy Partners Hat Mesa LLC	OGRID: 372417
Contact Name: Braden Harris	Contact Telephone: 832-672-4700
Contact email: dharwell@advanceenergypartners.com	Incident # *(assigned by OCD)*
Contact mailing address: 11490 Westheimer Rd. Suite 950. Houston, TX 77077	

Location of Release Source

Latitude 32.449342 Longitude -103.603795
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Wool Head 20 State Com 703H	Site Type: Produced Water Transfer Line
Date Release Discovered: August 28, 2019 (14:30 hrs)	API# 30-025-46268

Unit Letter	Section	Township	Range	County
O	20	T21S	R33E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Merchant Livestock)

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) 15	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: Failure of a 4-inch surface polyline transferring produced water during drilling operations of the 703H well.

Volume of release estimated by Advance Energy drilling personnel.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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)?
Although not a major release, notice was giving via phone to Dylan Ross-Coss on August 29, 2019 at 14:50 hrs by Andrew Parker of R.T. Hicks Consultants on the behalf of Advance Energy Partners Hat Mesa, LLC.

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:

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 Title: Sr. Env. Specialist

Signature: Andrew Parker Date: August 31, 2019

email: andrew@rthicksconsult.com Telephone: 970-570-9535

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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? (Plates 2 and 3)	318 (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 5)	☐ 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)? (Plates 5)	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? (Plate 6)	☐ 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? (Plates 4)	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? (Plates 4)	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? (Plate 4)	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland? (Plate 7)	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine? (Plate 8) In a Potash District	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology? (Plate 9)	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain? (Plate 10)	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ 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.

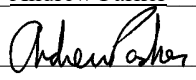
Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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: Sr. Env. Specialist

Signature:  Date: November 25, 2019

email: andrew@rthicksconsult.com Telephone: 970-570-9535

OCD Only

Received by: _____ Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
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.***

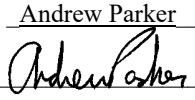
☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ 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: Sr. Env. Specialist

Signature:  Date: November 25, 2019

email: andrew@rthicksconsult.com Telephone: 970-570-9535

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
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 Title: Sr. Env. Specialist

Signature: Date: November 25, 2019

email: andrew@rthicksconsult.com Telephone: 970-570-9535

OCD Only

Received by: Date:

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:

Closure Report

Characterization, Remediation & Closure

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

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

November 25, 2019

NMOCD District 1 (vacant)
District 1 - HOBBS
1625 N. French Drive
Hobbs, New Mexico 88240
Via Email:
Electronic Submittal
emnrd-ocd-district1spills@state.nm.us

RE: 1RP # pending - Characterization, Remediation, and Closure Report
Wool Head 20 State Com 703H

NMOCD:

R.T. Hicks Consultants submits this characterization, remediation, and closure report on the behalf of Advance Energy Partners Hat Mesa, LLC (Advance Energy).

The release occurred on August 28th, 2019 and was caused by the failure of a 4-inch surface polyline transferring recycled treated produced water to during drilling operations at the Wool Head 20 State Com 703H.

On August 29th the release extent was defined by visual identification of moist soil and verified using an Electromagnetic (EM Survey). Remediation of impacted soil began on the same day.

Remediation and reclamation were completed by October 15, 2019. The C-141 including the Characterization, Remediation and Closure Forms is attached. We respectfully ask NMOCD for closure of the regulatory file.

Hick Consultants relied on 19.15.29 NMAC for characterization, remediation, and closure reporting for 1RP-#pending. We have attempted to contact NMOCD on several occasions and have unsuccessfully obtained an RP # by the time this report was submitted. The C-141 was submitted NMOCD on Nov. 1st, 2019. An accounting error delayed the original submission. Although not a major release, notice was giving via phone to Dylan Ross-Coss on August 29, 2019 at 14:50 hrs byAndrew Parker of R.T. Hicks Consultants on the behalf of Advance Energy Partners Hat Mesa, LLC.

The location of the release is 0.80-miles southwest of the Wool Head 20 State Com 703H drilling location at coordinates 32.449342, -103.603795 (Latitude/Longitude; NAD 83). The release occurred within silty sands from the surface to 7-feet below ground surface where a hard caliche layer was encountered.

The report is divided into three sections:

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

Plates

- Plate 1 – Site Map
- Plates 2 through 10 – As labeled on the C-141 Characterization Checklist

Tables

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

Appendices

- Appendix A – EM Survey Calibration Data
- Appendix B – OSE Well Logs
- Appendix C - Laboratory Certificate of Analyses

I. Initial Response

The release occurred on August 28th, 2019 and was caused by the failure of a 4-inch surface polyline transferring recycled treated produced water to during drilling operations at the Wool Head 20 State Com 703H.

The transfer line was shut down at 14:30 hrs at the discovery of the release. Released water immediately infiltrated into the silty sand.

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 (Plates 2-10).

1. Site Map

On September 29th, Mr. Parker and Mr. Saenz of R.T. Hicks Consultants identified the release extent with visual identification of moist soil and verified by conducting an electromagnetic (EM) survey with a Geonics EM-38 (see Appendix A for a discussion on EM surveys). The release extent was delineated to a temperature corrected electrical conductivity (EC) reading of 0.20 dS/m. As discussed in Appendix A, an EC reading of 0.20 dS/m correlates with chloride concentrations below 600 mg/kg. Plate 1 shows the final excavation extent relative to release and sample locations.

Figure 1: Mr. Saenz conducting an EM Survey relative to the release extent. Moist soil is visible at the edge of the release extent. The white pin flag (photo lower left) identifies an edge of the release where EC = 20 dSm. GPS: 32.4493250 N, -103.6038361 W. Date/Time: 2019-10-29 11:55am.

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 2). Spatial analysis shows:

- The nearest water well is located 1.47-miles east of the release; identified as MISC-392 (CP-601). Depth to water at this well 178 ft.
- The next two nearest water wells with recorded depth to water are located

- 1.7-miles southeast (CP-0854 POD 1) with a depth to water of 600-feet.
- 2.18-miles east (CP-01355 POD 1) with a depth to water of 582- feet.

Review of well logs available from the New Mexico Office of the State Engineer (OSE) online database (see Table 1) shows that the average depth to the top of the water-bearing zone, for nearby wells under Artesian pressure, exceeds 800 feet below land surface, as shown in the "top of water bearing strata" column. Appendix A contains well logs available online from the OSE.

OSE well logs show that the nearby wells have a minimum of 103 feet of pressure head above the confining layer. It is important to recognize that at CP-00854 ground water is at a depth of 755 feet and confining pressure causes the water column to rise 155 feet for a perceived depth to water of 600 feet bgs.

We recognize that thin water-bearing units above the regional water-bearing zone may not have been recorded by the well drillers. However, more shallow water-bearing zones would be sandstone units within the Dockum Group redbeds and, like the regional water-bearing zone, would be under artesian pressure.

Ground water flow is to the south-southwest as demonstrated on the potentiometric map (Plate 3). We relied on the USGS water wells to generate the potentiometric surface. Regionally, USGS water wells show that ground water is within the Alluvium/Bolsom and Chinle Formations.

The potentiometric surface indicates that the depth to water, which is under artesian flow, is approximately 318 feet below ground surface, where

318 feet = 3778 ft surface elevation – 3460 ft potentiometric surface.

3. Wellhead Protection Area

Plate 4 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 5 shows that the release extent is **<u>not</u>**:

- Within ½ mile of a significant watercourse.
- 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 within pastureland not in-use for oil, gas, or exploration.

According to Table 1 of 19.15.29 NMAC, closure criteria limits are as follows:

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

Soil sampling, an EM Survey, and field screening for EC was employed to characterize and delineate the release extent.

Initial field screening of EC, EM Survey, and soil during remediation efforts showed that chloride within the upper 4-feet exceeded the 600 mg/kg closure limit throughout the release/EM Survey area where EM readings for EC exceeded 0.20 dS/m.

TPH and BTEX concentrations were below laboratory detection levels and are not evaluated further.

The release occurred within silty sands from the surface to 7-feet below ground surface where a hard caliche layer was encountered.

III. Remediation and Closure

1. Excavation Protocol

Excavation of impacted material was determined by field screening with an EM-38 or a Hanna HI98304 DiST 4 handheld meter. EC readings >0.20 dS/m indicated that chloride concentrations are likely to exceed 600 mg/kg. With respect to the upper 4-feet, excavation continued until EC readings showed concentrations <0.20 dS/m within the area of concern – at which time a 5-point composite soil sample was collected for laboratory confirmation via EPA Method 200.1 or SM4500.

If soil confirmation sample results exceeded 600 mg/kg chloride at the excavation walls, the excavation wall was extended horizontally and resampled. Horizontal excavation continued until subsequent laboratory confirmation showed chloride below 600 mg/kg in the upper 4-feet.

Excavation depth was determined by 5-point composite sampling of the base. Vertical excavation continued until the base of the excavation exhibited chloride less than 600 mg/kg at 5.5 feet bgs or less. Below 4-feet, allowable chloride concentrations per Table 1 of 19.15.29 NMAC is <20,000 mg/kg.

Figure 2: Excavating along release extent viewing northwest from the south wall of sample S-09. GPS: 32.4490083 N, -103.6033694 W. Date/Time: 2019-09-04 15:02:18

Excavated soil was transported to R360 for proper disposal. Clean backfill soil was purchased from Merchant Livestock Company under a Surface Use Agreement.

2. Remediation Activities

The excavation extent is irregular in shape and covers a surface area of approximately 600 square yards with a volume of approximately 900 cu. yds. As shown on Plate 1 the excavation consists of twelve (12) soil sample centroids representing a sampling radius of approximately 25-feet (+/- 5 ft) on center.

Table 2 is a summary of analytical results showing final confirmation sampling of the excavation walls and bases.

- TPH and Benzene at select samples were below laboratory detection levels.
- All sampled locations show chloride concentrations below 600 mg/kg in the upper 4 feet.
- All sampled bases from 1 to 8 ft below ground surface were below 20,000 mg/kg with the highest chloride concentration at S-08 Base at 5-ft below ground surface that exhibited 704 mg/kg.

Laboratory Certificate of Analyses are in Appendix C.

Figure 3, below, shows final restoration after seeding and surface contouring to blend with the surrounding topography.

Figure 3: Final reclamation and restoration. Photo is viewing northwest from S-0X. Date/Time: 2019-10-15 11:51:26. GPS: 32.4491920 N , -103.6033783 W.

3. Closure

As discussed above, the release has been reclaimed and restored to meet closure requirements per 19.15.29.12 and 19.15.29.13 NMAC. Therefore, we respectfully request closure of the regulatory file.

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

Sincerely,
R.T. Hicks Consultants, Ltd.

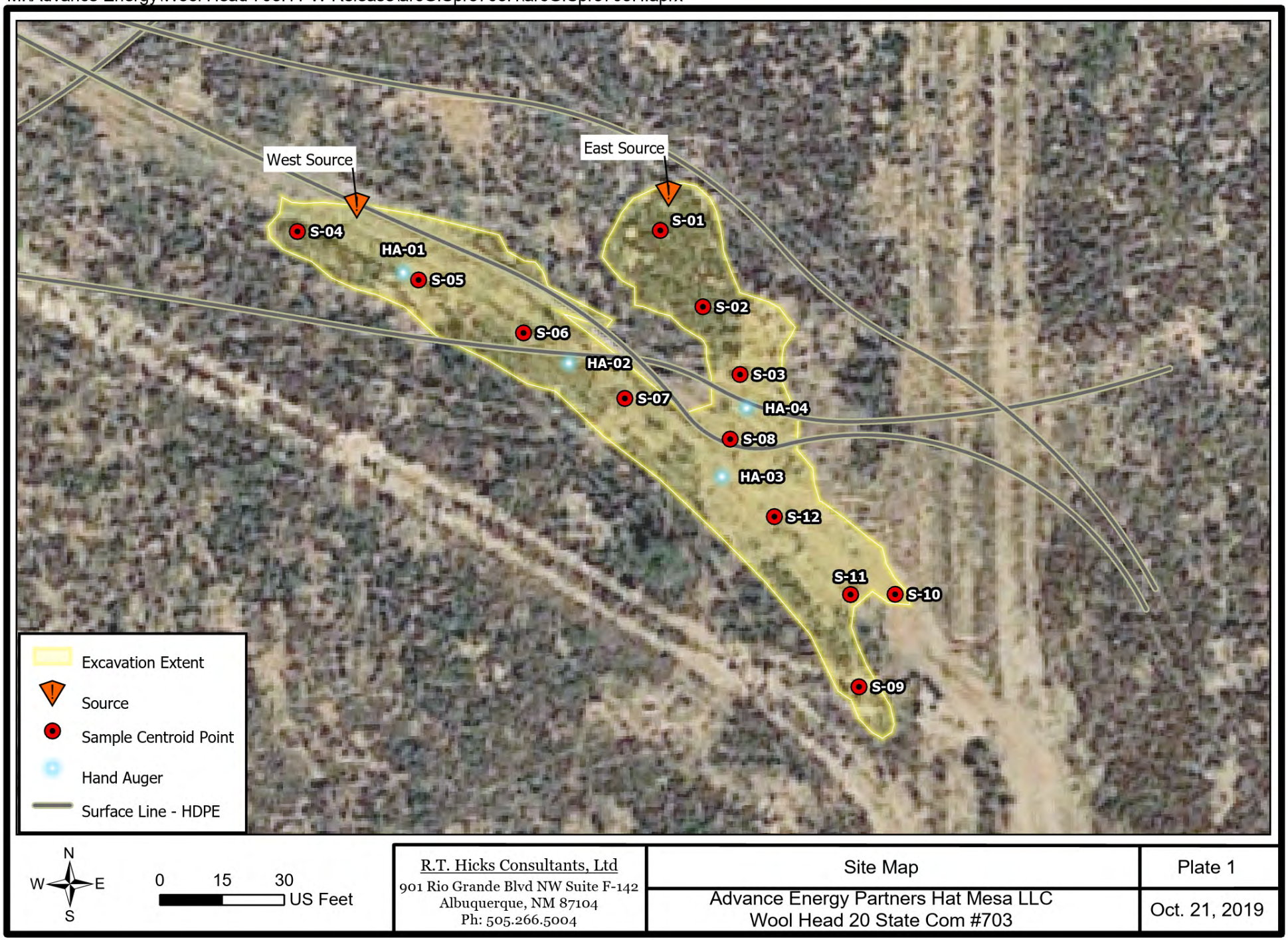
Andrew Parker
Sr. Env. Specialist

Copy: David Harwell (DHarwell@advanceenergypartners.com);
Advance Energy Partners Hat Mesa, LLC
Ryan Mann, New Mexico State Land Office (rmann@slo.state.nm.us);
Clabe Pearson (clabe@merchantlivestock.com); Merchant Livestock;
Brad Blevins (bblevins5252@gmail.com); Merchant Livestock

Plates

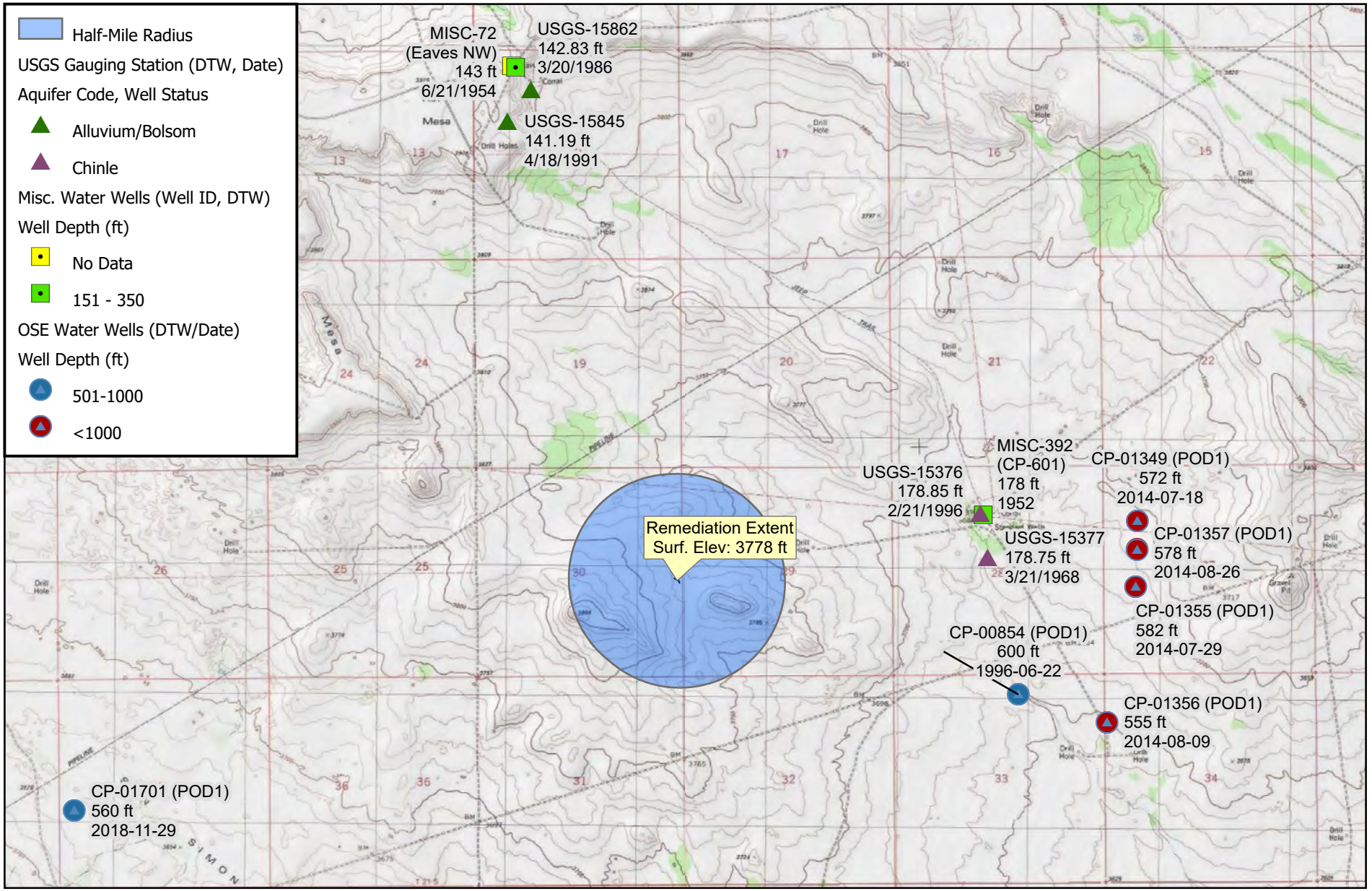
R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



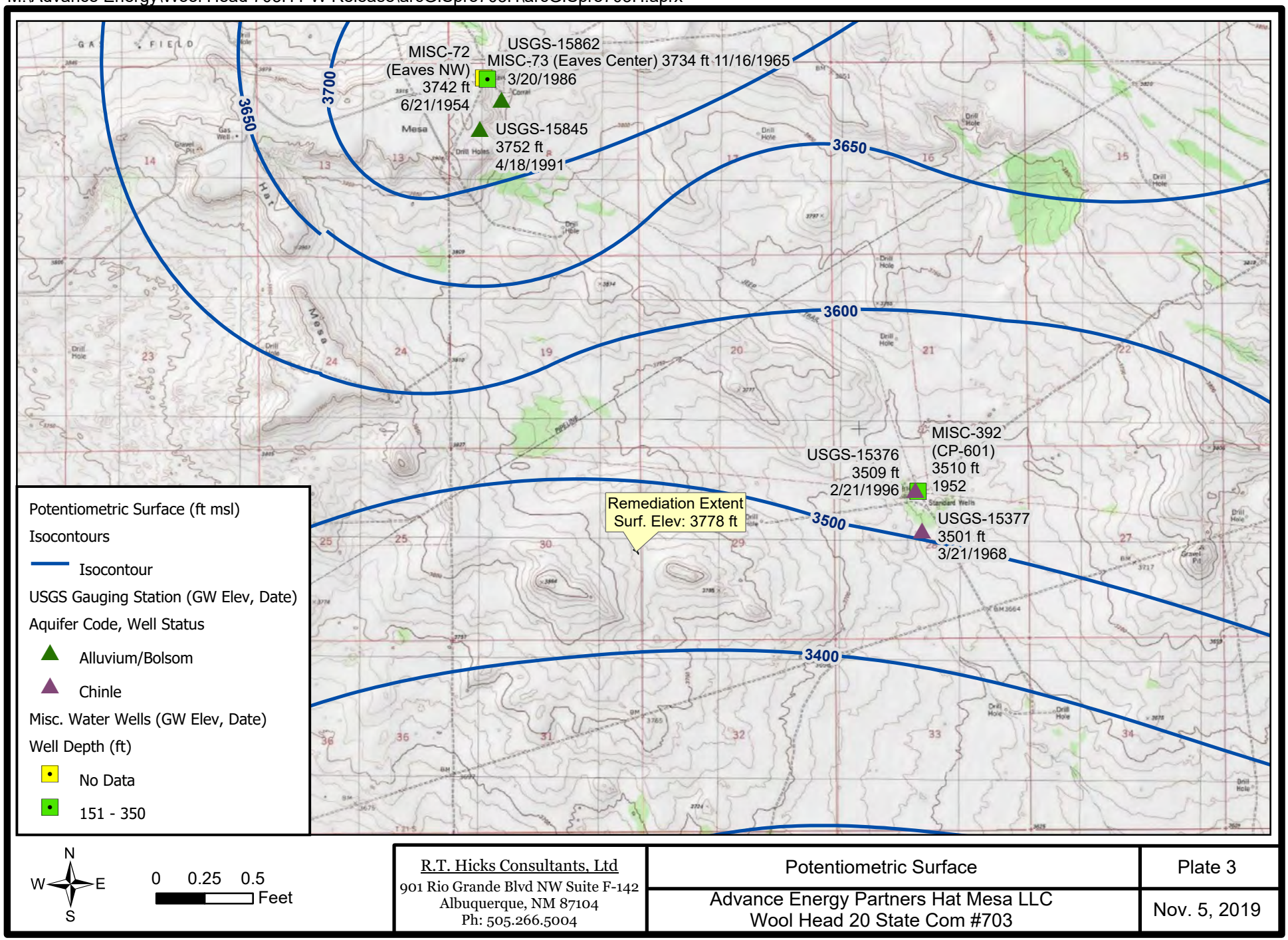
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Site Map Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Plate 1 Oct. 21, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



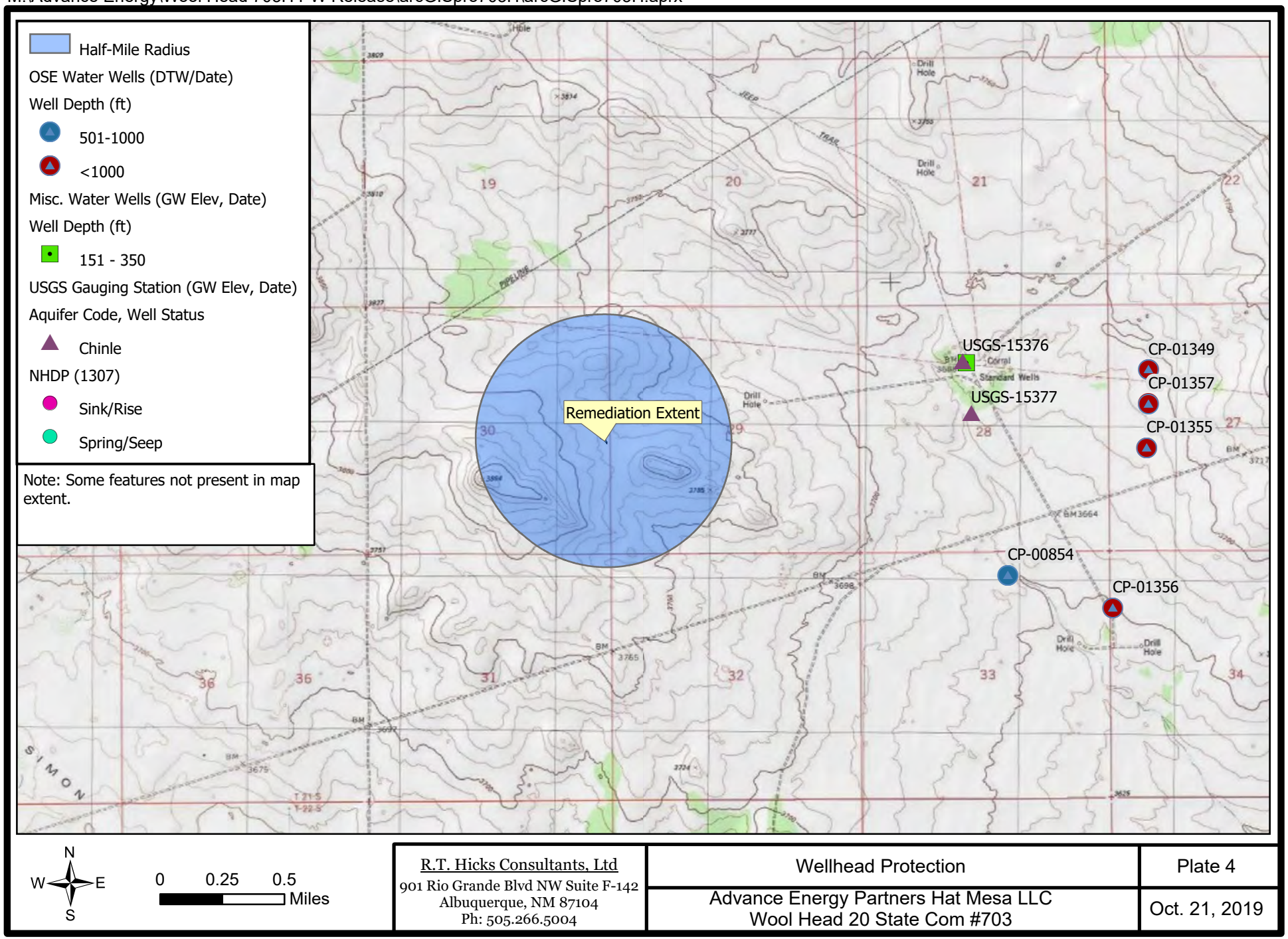
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Depth To Water	Plate 2
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



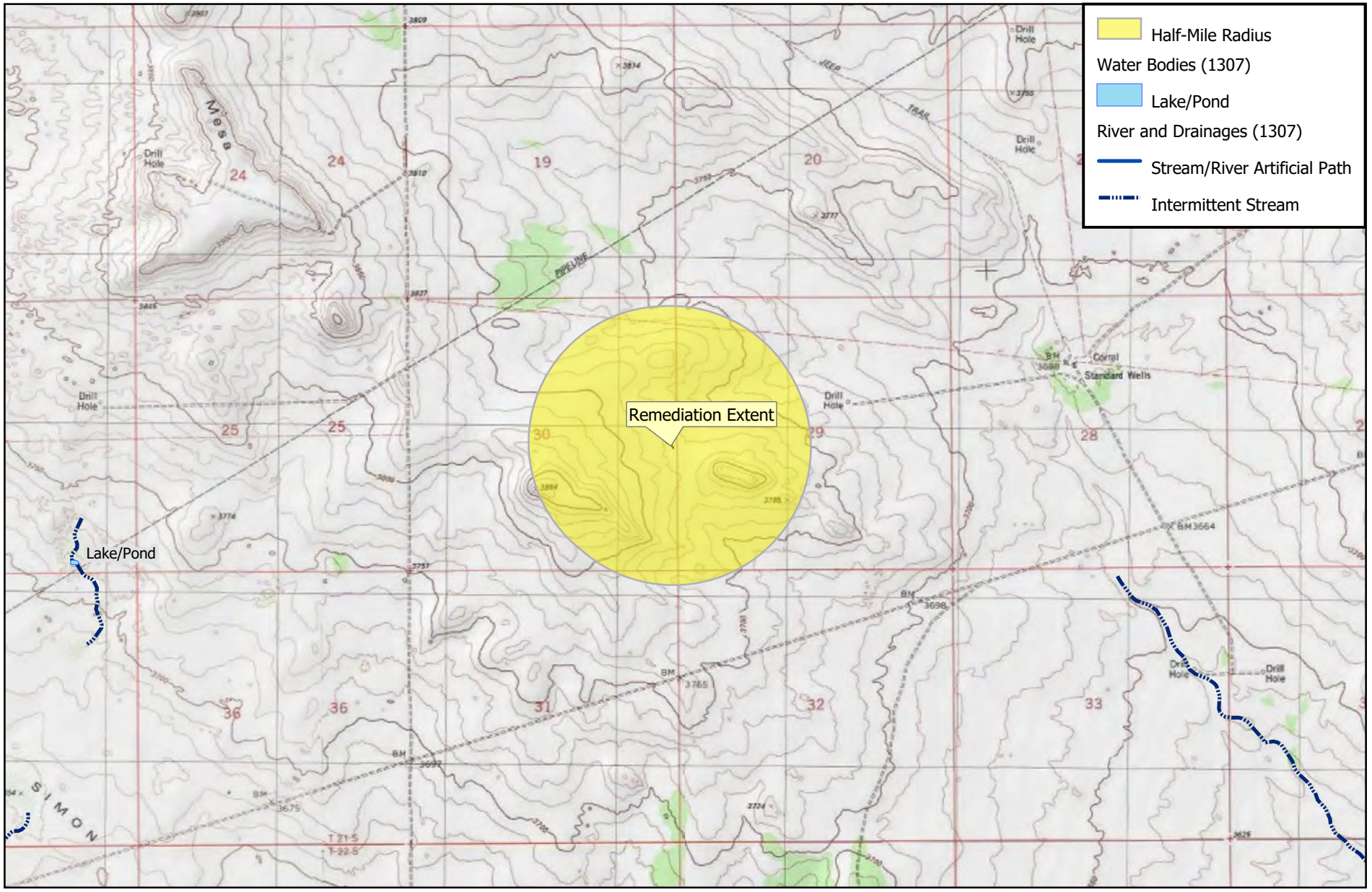
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Potentiometric Surface	Plate 3
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



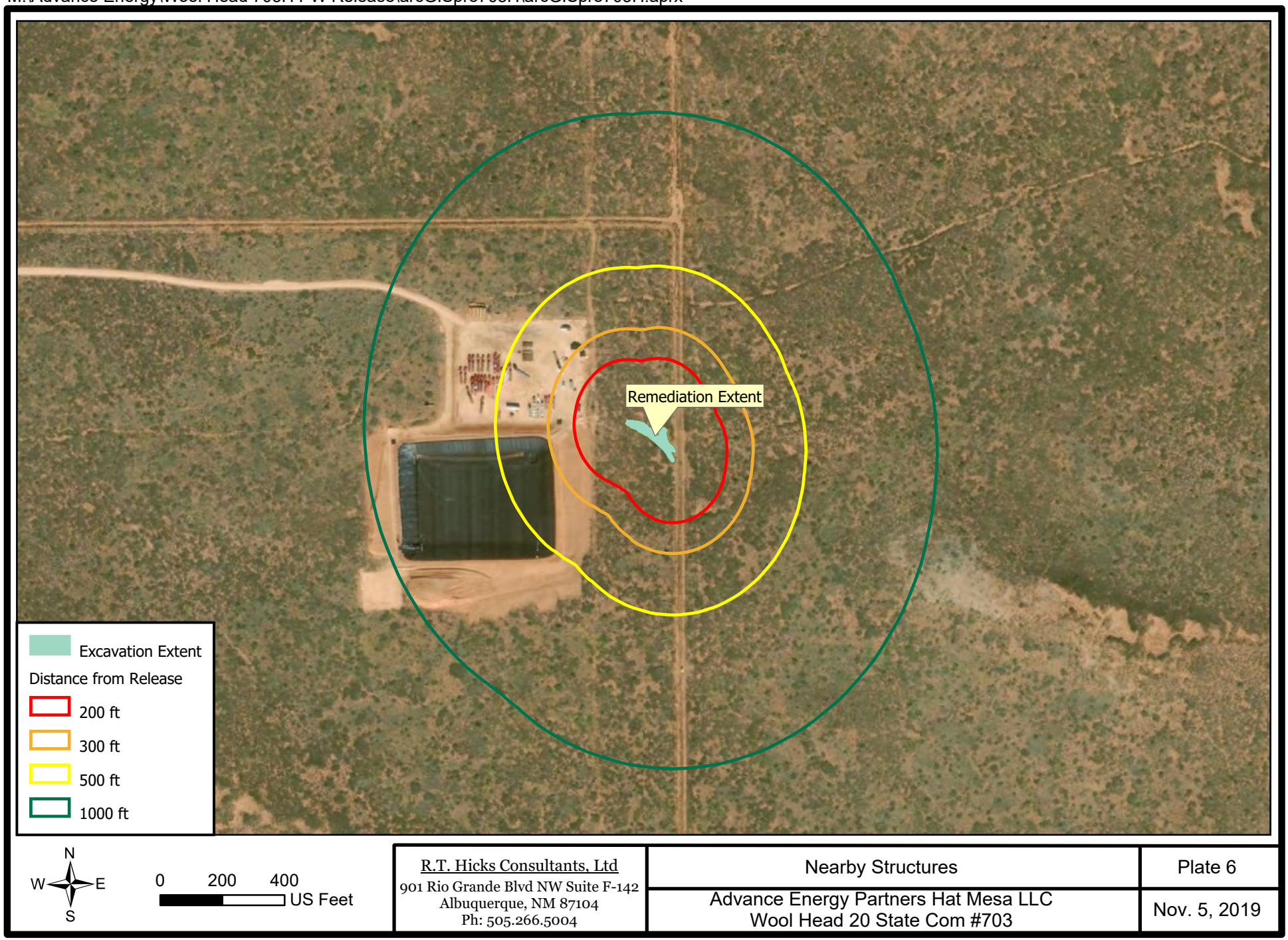
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Wellhead Protection	Plate 4
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Oct. 21, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



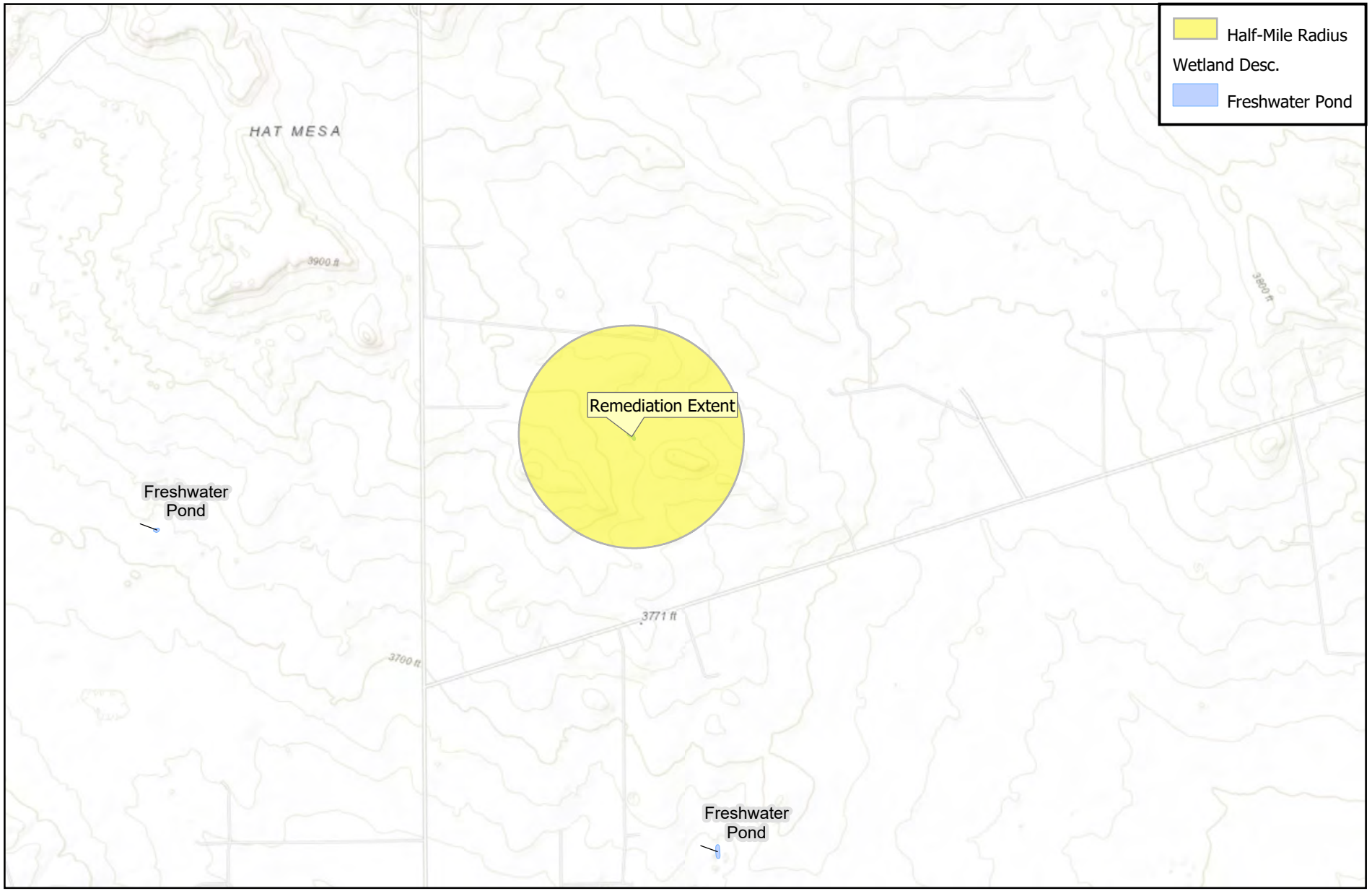
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Significant Watercourses	Plate 5
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



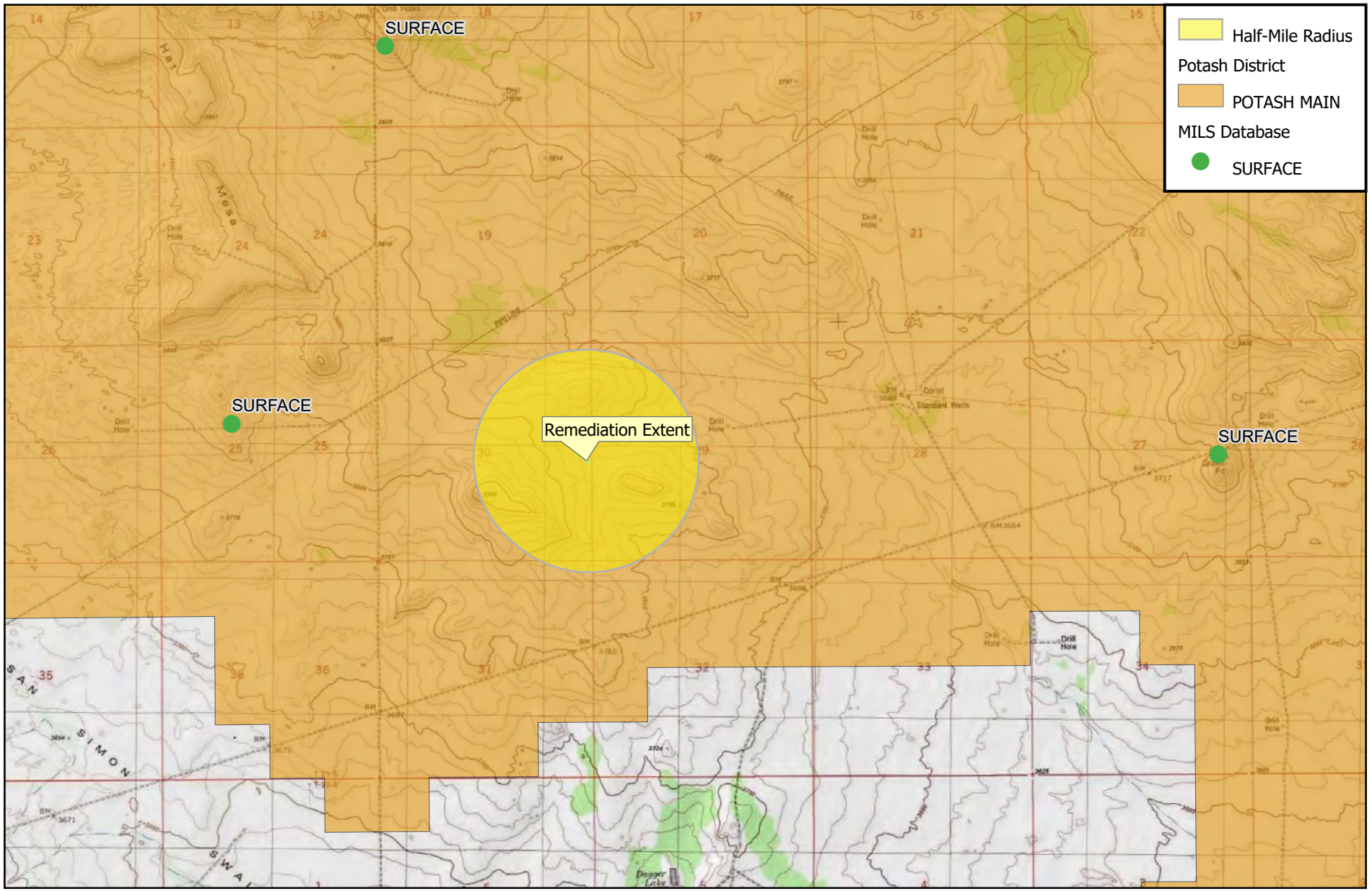
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Structures	Plate 6
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



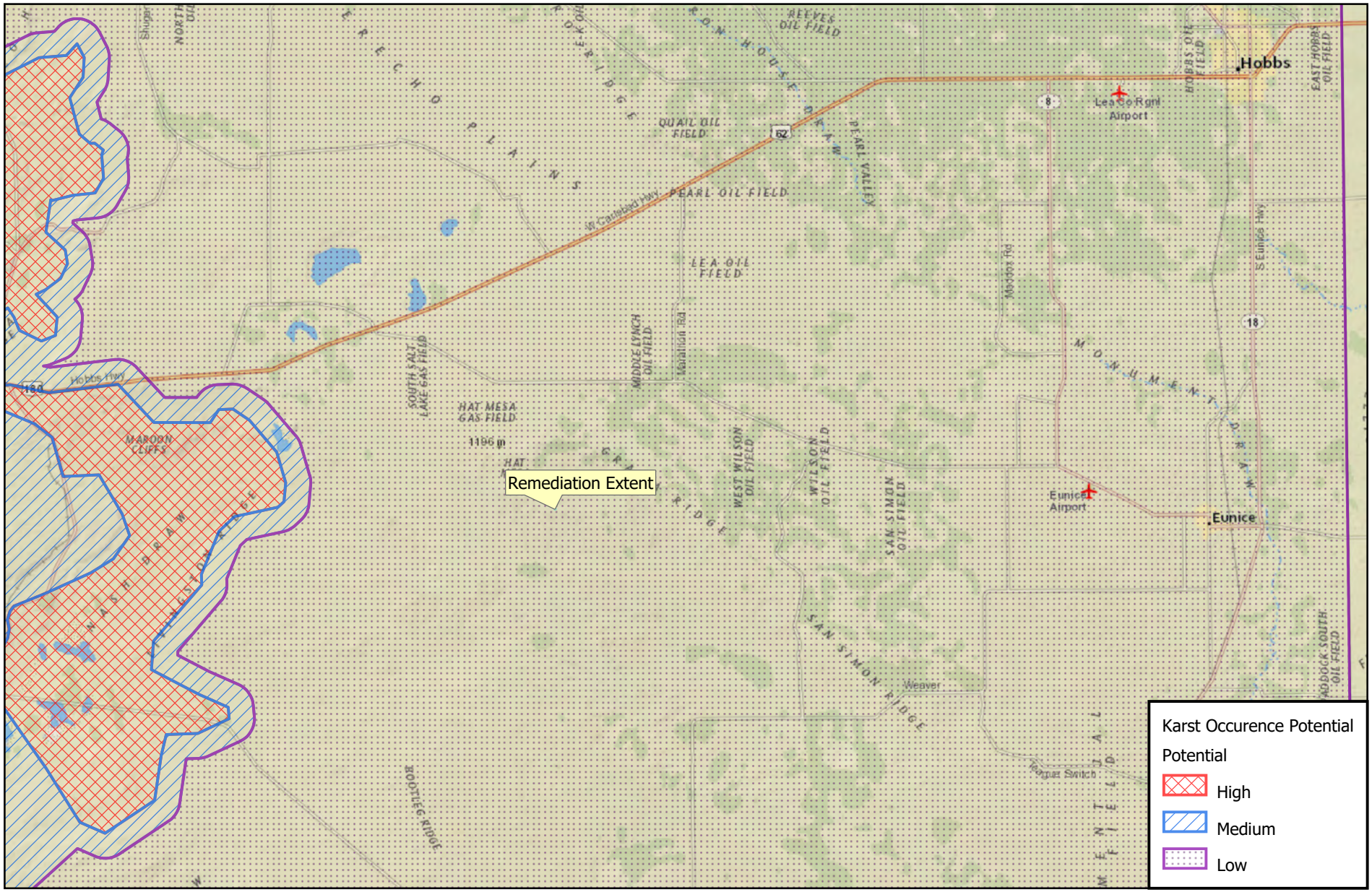
R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Nearby Wetlands	Plate 7
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.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 8
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Karst Potential	Plate 9
	Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

M:\Advance Energy\Wool Head 703H PW Release\arcGISpro703H\arcGISpro703H.aprx

N W E S

0 2 4 Miles

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

Flood Hazard	Plate 10
Advance Energy Partners Hat Mesa LLC Wool Head 20 State Com #703	Nov. 5, 2019

Tables

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

November 5, 2019

Table 1
OSE Water Well Log Data Summary

Wool Head 20 State Com 703H
Advance Energy Partners Hat Mesa, LLC

POD Number	Date	Top of Water Bearing Strata	Bottom of Water Bearing Strata	Depth to Water	Source	Height Above Confining Layer
		Feet	Feet	Feet		Feet
CP-00601	1952		223	178		
CP 00854	6/22/1996	755	890	600	Artesian	155
CP 01349 POD 1	7/18/2014	990	1188	572	Artesian	418
CP 01355 POD 1	7/29/2014	925	1185	582	Artesian	343
CP 01356 POD 1	8/9/2014	765	1092	555	Artesian	210
CP 01357 POD 1	8/26/2014	945	1286	578	Artesian	367
CP 01701 POD 1	11/29/2018	560	840	457	Artesian	103
	Average	823	1080	557	Artesian	266

10/23/2019

Table 2
Summary of Analytical Results

Advance Energy Partners Hat Mesa, LLC
Wool Head 20 State Com #703H

Sample ID	Date	Discrete Depth (Feet)	Top Depth (Feet)	Bottom Depth (Feet)	EC (Hanna) dS/m	Chloride (PPM)	GRO+DRO (PPM)	TPH Ext. (PPM)	Benzene (PPM)	BTEX (PPM)	Comments
NMOCD Limits											
0 - 4 feet & "not in-use"						600	--	2,500	10	50	
> 4 ft or "in-use"						20,000	1,000	2,500	10	50	
HA-01	9/3/2019	5.5			0.06	48					Hand Auger; Grid S-05
HA-02	9/3/2019	3.5			0.07	NS					Hand Auger; Between Grid S-07 & S-08 Not Sampled
HA-03	9/3/2019	4.0			0.02	NS					Hand Auger; Between Grid S-08 and S-12 Not Sampled
HA-04	9/3/2019	5.5			0.06	160					Hand Auger; Grid S-03
S-01 Base	9/5/2019	5.5			0.01	48					
S-01 N. Wall	9/5/2019		0.0	4.0	0.01	48					
S-01 S. Wall	9/5/2019		0.0	4.0	0.03	48					
S-01 W. Wall	9/3/2019		0.0	4.0	0.05	48	<20	<30	<0.050	<0.3	
S-01 Trench Base	9/3/2019	8.0			0.04	32					
S-01 Trench Wall	9/3/2019	6.0			0.04	32					
S-02 Base	9/5/2019	5.0			0.01	32					
S-02 N. Wall	9/5/2019		0.0	4.0	0.11	160	<20	<30	<0.05	<0.3	
S-02 S. Wall	9/5/2019		0.0	4.0	0.02	48					
S-03 Base	9/5/2019	5.5			0.01	48					
S-03 N. Wall	9/5/2019		0.0	4.0	0.01	48					
S-03 S. Wall	9/5/2019		0.0	4.0	0.01	48					
S-04 Base	9/9/2019	3.0			0.02	64					
S-04 N. Wall	9/9/2019		0.0	3.0	0.02	16					
S-04 S. Wall	9/9/2019		0.0	3.0	0.04	32					
S-04 E. Wall	9/9/2019		0.0	3.0	0.05	32	<20	<30	<0.05	<0.3	
S-05 Base	9/9/2019		4.0	5.0	0.15	128	<20	<30	<0.05	<0.3	
S-05 N. Wall	9/9/2019		0.0	4.0	0.02	32					
S-05 S. Wall	9/9/2019		0.0	4.0	0.04	48					
S-06 Base	9/5/2019	4.5			0.34	448	<20	<30	<0.05	<0.3	
S-06 N. Wall	9/9/2019		0.0	4.0	0.02	16					
S-06 S. Wall	9/5/2019		0.0	4.0	0.12	80					
S-07 Base	9/5/2019	4.5			0.05	80					
S-07 N. Wall	9/5/2019		0.0	4.0	0.04	64					
S-07 S. Wall	9/5/2019		0.0	4.0	0.04	32					
S-08 Base	9/9/2019	5.0			0.8	704					
S-08 N. Wall	9/9/2019		0.0	4.0	0.02	32					
S-08 S. Wall	9/9/2019		0.0	4.0	0.02	16					
S-09 Base	9/5/2019	2.5			0.01	32					
S-09 E. Wall	9/5/2019		0.0	2.0	0.1	144					
S-09 N. Wall	9/5/2019		0.0	2.5	0.04	48					
S-09 S. Wall	9/5/2019		0.0	2.5	0.01	32					
S-10 Base	9/9/2019	4.5			0.05	48					
S-10 E. Wall	9/9/2019		0.0	4.0	0.01	16					
S-10 N. Wall	9/9/2019		0.0	4.0	0.01	32					
S-10 S. Wall	9/9/2019		0.0	4.0	0.03	<16					
S-11 Base	9/5/2019	1.0			0.01	48					
S-12 Base	9/9/2019	5.0			0.06	64					
S-12 N. Wall	9/9/2019		0.0	4.0	0.07	16					
S-12 S. Wall	9/9/2019		0.0	4.0	0.06	48					

Appendix A
EM Survey Calibration

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

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745
✖ Durango, CO ✖ Carlsbad, NM ✖ Midland, TX

ELECTROMAGNETIC SURVEY

RELATIONSHIP WITH ELECTRICAL CONDUCTIVITY AND CHLORIDE

Revised: October 12, 2019 (DRAFT)

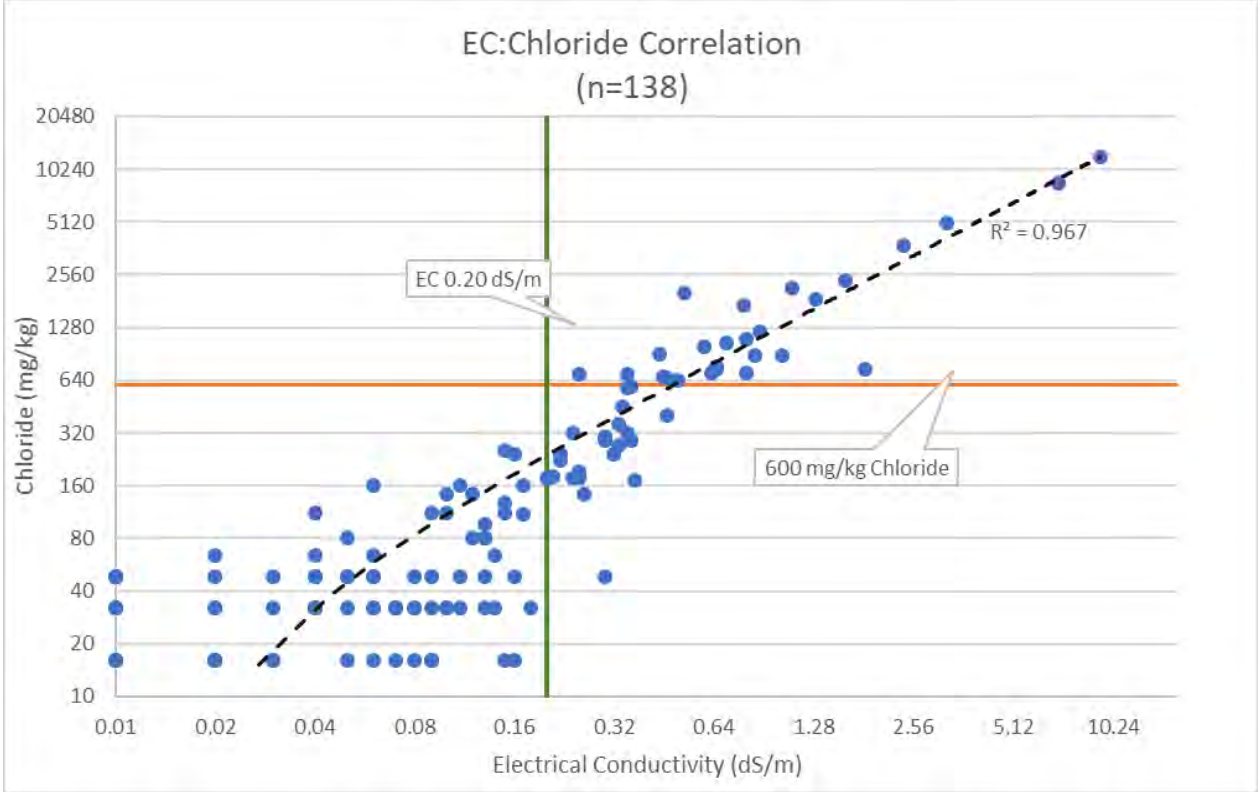
Electromagnetic surveys (EM Survey) are commonly used to measure electrical conductivity (EC, "soil salinity") in soils. Employing a Geonics EM38 (Exhibit 1), field personnel can effectively delineate the horizontal extent of a produced water release by measuring EC and monitoring for EC changes between background and higher EC readings. Increasing EC measurements suggest that the edge of the release extent is approaching.

Exhibit 1: Measuring EC with the EM38 in the vertical position.

The EM38 detects EC from the surface to a depth of approximately 4-feet. EC measurements can be obtained in the vertical or horizontal positions. In the vertical position, EC readings are weighted toward the lower depths of 3 to 4 feet. In the horizontal position, EC readings are weighted toward the upper 0 to 2 feet. If a higher EC reading is obtained in the horizontal position than the vertical position, produced water has likely impacted the upper surface more than at lower depths. If a higher EC reading is obtained in the vertical position than the horizontal position, produced water has likely impacted lower soils than the upper surface soils.

The below charts show the correlation between EC and Chloride (Cl) measurements measured over 139 sample points (n=138). The EC measurements collected in the field are temperature corrected (TC) to 25º Celsius.

Analysis of data shows that an EC values greater than 0.20 dS/m is the delineation threshold where chloride in soil has a potential to be greater than 600 mg/kg. Furthermore, field personnel can survey a release and identify "hot spots" with the highest EC readings. These hot spots are likely areas where impacted to near surface soils (0 to 4 feet) from released produced water will be the greatest.



Appendix B

OSE Well Logs

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

5F

Revised December 1975

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

Declaration of Owner of Underground Water Right

80227

'79 APR 20 PM 3 01

CAPITAN BASIN
BASIN NAME

Declaration No. CP-601 Date received April 17, 1979

STATE ENGINEER OFFICE
SANTA FE, N.M. 87501

STATEMENT

1. Name of Declarant THE MERCHANT LIVESTOCK COMPANY
   Mailing Address P.O. Box 548 Carlsbad
   County of Eddy, State of New Mexico
2. Source of water supply shallow
   (artesian or shallow water aquifer)
3. Describe well location under one of the following subheadings:
   a. ____ ¼ NE ¼ NW ¼ of Sec. 28 Twp. 21S Rge. 33-E N.M.P.M., in Lea County.
   b. Tract No. ____ of Map No. ____ of the ____.
   c. X = ____ feet, Y = ____ feet, N. M. Coordinate System ____ Zone in the ____ Grant.
   On land owned by ____.
4. Description of well: date drilled 1952 driller ____ depth 223' feet.
   outside diameter of casing 6 5/8 inches; original capacity ____ gal. per min.; present capacity 3 gal. per min.; pumping lift ____ feet; static water level 178 feet (above) (below) land surface;
   make and type of pump ____
   make, type, horsepower, etc., of power plant ____
   Fractitional or percentage interest claimed in well 100%
5. Quantity of water appropriated and beneficially used ~~(acre feet per annum)~~ up to 3 (acre feet per annum)
   for stock water purposes.
6. Acreage actually irrigated ____ acres, located and described as follows (describe only lands actually irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner
			stock only		The Merchant Livestock Co.

'79 APR 17 AM 8 01
STATE ENGINEER OFFICE
ROSWELL, N. M.

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

7. Water was first applied to beneficial use ____ (month) ____ (day) 1952 (year) 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: ____
8. Additional statements or explanations ____
   name of well - Standard

I, J. D. Merchant, Jr., President being first duly sworn upon my oath, depose and say that the above 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.

THE MERCHANT LIVESTOCK CO. declarant.
by: J. D. Merchant, Jr. President

Subscribed and sworn to before me this 12th day of April, A.D. 1979

My commission expires March 2, 1980 Notary Public

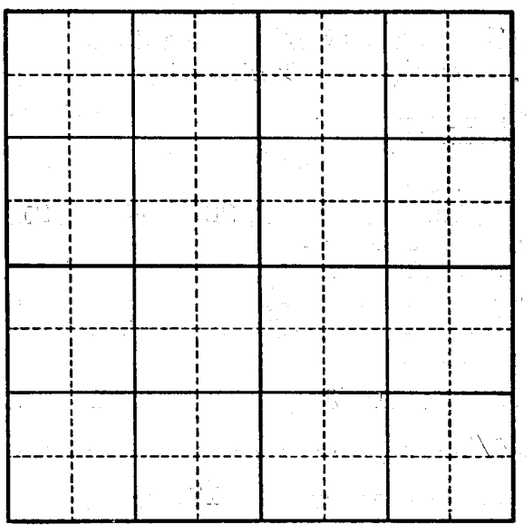
563298

FILED

UNDER NEW MEXICO LAW A DECLARATION IS ONLY A STATEMENT OF DECLARANT'S CLAIM. ACCEPTANCE FOR FILING DOES NOT CONSTITUTE APPROVAL OR REJECTION OF THE CLAIM.

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 acre feet of water per acre per year 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.

SF

EC

'79 APR 20 PM 3 00

STATE ENGINEER OFFICE
SANTA FE, N.M. 87501

April 17, 1979

Files: CP-584; CP-585; CP-586; CP-587; CP-588;
CP-589; CP-590; CP-591; CP-592; CP-593;
CP-594; CP-595; CP-596; CP-597; CP-598;
CP-599; CP-600; CP-601; CP-602

The Merchant Livestock Company
P. O. Box 548
Carlsbad, NM 88220

Gentlemen:

Enclosed are your copies of Declarations of Owner of Underground Water Right as numbered above, which have been filed for record in the office of the State Engineer.

Please refer to each individual number in all future correspondence concerning these declarations.

The filing of these declarations does not indicate affirmation or rejection of the statements contained therein.

Yours very truly,

J. C. Groseclose
Basin Supervisor

JCG/fh
Encls.
cc: Santa Fe

563298

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
	CP 00854 POD1	1	1	2	33	21S	33E	633879	3590223

Driller License: 421 **Driller Company:** GLENN'S WATER WELL SERVICE

Driller Name: GLENN, CLARK A."CORKY" (LD)

Drill Start Date: 06/22/1996 **Drill Finish Date:** 06/22/1996 **Plug Date:**

Log File Date: 07/11/1996 **PCW Rcv Date:** 10/17/2013 **Source:** Shallow

Pump Type: SUBMER **Pipe Discharge Size:** 2.875 **Estimated Yield:** 100 GPM

Casing Size: 6.63 **Depth Well:** 950 feet **Depth Water:** 600 feet

Water Bearing Stratifications:

Top	Bottom	Description
755	805	Sandstone/Gravel/Conglomerate
860	890	Sandstone/Gravel/Conglomerate

Casing Perforations:

Top	Bottom
760	950

Meter Number: 8514 **Meter Make:** BLANCETT

Meter Serial Number: 040711711 **Meter Multiplier:** 1.0000

Number of Dials: 7 **Meter Type:** Diversion

Unit of Measure: Barrels 42 gal. **Return Flow Percent:**

Usage Multiplier: **Reading Frequency:** Quarterly

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount
03/15/2004	2004	121	A	jw		0
03/29/2004	2004	69871	A	jw		0
05/17/2004	2004	8758	A	jw		2.651
06/11/2004	2004	79641	A	jw		2.998
01/27/2012	2012	18062553	A	RPT	Initial reading	0
03/01/2012	2012	19039807	A	RPT		2.999
05/29/2013	2013	179696	A	RPT	initial reading	0
10/07/2013	2013	460774	A	RPT	Qtr IV 2013	36.229
11/11/2013	2013	540326	A	RPT		10.254
01/01/2014	2013	614283	A	RPT		9.533
10/01/2014	2014	1122654	A	RPT		65.526
01/01/2015	2014	1212343	A	RPT		11.560
03/31/2015	2015	1307063	A	RPT		12.209
06/27/2015	2015	1369556	A	RPT		8.055

Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount
09/30/2015	2015	1371471	A	RPT		0.247
10/22/2015	2015	1400502	A	RPT		3.742
11/30/2015	2015	1400502	A	RPT		0
04/28/2016	2016	1464116	A	RPT	"JD33 Well"	8.199
06/01/2016	2016	1464116	A	RPT		0
07/27/2016	2016	1496980	A	RPT	JD33 Well	4.236
09/01/2016	2016	1510835	A	RPT	JD 33 Well	1.786
09/30/2016	2016	1517146	A	RPT		0.813
10/31/2016	2016	1531178	A	RPT	JD 33 well	1.809
11/29/2016	2016	1553285	A	RPT	JD33 Well	2.849
03/01/2017	2017	1583100	A	RPT		3.843

**YTD Meter Amounts:	Year	Amount
	2004	5.649
	2012	2.999
	2013	56.016
	2014	77.086
	2015	24.253
	2016	19.692
	2017	3.843

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	Tws	Rng	X	Y
	CP 01349 POD1	2	3	1	27	21S	33E	635304	3591576

Driller License: 421 **Driller Company:** GLENN'S WATER WELL SERVICE

Driller Name: GLENN, CLARK A."CORKY"

Drill Start Date: 07/12/2014 **Drill Finish Date:** 07/18/2014 **Plug Date:**

Log File Date: 08/04/2014 **PCW Rcv Date:** **Source:** Artesian

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

Casing Size: 7.00 **Depth Well:** 1188 feet **Depth Water:** 572 feet

Water Bearing Stratifications:	Top	Bottom	Description
	990	1188	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	721	1188

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2014 SEP 10 PM 2:15

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
CP-1355 (East Standard South) *** Revised 09/09/14 ***	
WELL OWNER NAME(S)	PHONE (OPTIONAL)
Merchants/Glenn's Water Well Service, Inc.	575-398-2424
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
P. O. Box 692	Tatum / NM / 88267

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	26	54.8	N
LONGITUDE	103	33	58.3	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

NE1/4NW1/4SW1/4 Section 27, Township 21 South, Range 33 East on Merchants Livestock Land

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 421	Corky Glenn	Glenn's Water Well Service, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
07/22/14	07/29/14	1,192'	1,192'	925'

COMPLETED WELL IS: (•) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 582'

DRILLING FLUID: (•) AIR ( ) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: (•) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER – SPECIFY:

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	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0'	40'	20"	16"	None	15 1/2"	.250	
0'	757'	14 3/4"	9 5/8"	Thread & Collar	8.921"	36 lbs.	none
690'	1,192'	8 3/4"	7" (502.14' Total)	Thread & Collar	6.366"	23 lbs.	1/8"
			317.96 perforated				
			on bottom of liner				

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
0	40'	20"	Cemented	2 yds.	Top Pour
0	757'	14 3/4"	Float and shoe cemented to surface	962	Circulated

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	Exp1	21S.33E.27.312			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	4'	4'	Sand	○ Y ◉ N	
4'	28'	24'	Caliche	○ Y ◉ N	
28'	120'	92'	Sand & Clay	○ Y ◉ N	
120'	260'	140'	Red Clay	○ Y ◉ N	
260'	757'	497'	Red & Brown Shale, and Clay (some blue)	○ Y ◉ N	
757'	815'	58'	Red & Brown Shale	○ Y ◉ N	
815'	840'	25'	Blue Clay & Shale	○ Y ◉ N	
840'	925'	85'	Red and Brown Shale (some sandrock)	○ Y ◉ N	
925'	975'	50'	Watersand and Gravel	◉ Y ○ N	
975'	1,185'	210'	Watersand (brown sandrock)	◉ Y ○ N	
1,185'	1,192'	7'	Red Shale	○ Y ◉ N	
				○ Y ◉ N	
				○ Y ◉ N	
				○ Y ◉ N	
				○ 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):

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:

0' to 757' drilled with mud.
757' to 1192' drilled with air and foam.

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

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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Corky Glenn — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

9/9/14 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	21S.33E.27.312				PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): CP - 1355 East Standard (South)	OSE FILE NUMBER(S):
WELL OWNER NAME(S): Merchants Livestock/Glenn's Water Well Service, Inc.	PHONE (OPTIONAL): (575)398-2424
WELL OWNER MAILING ADDRESS: P.O. Box 692	CITY: Tatum STATE: NM ZIP: 88267

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	26	54.8	N
LONGITUDE	103	33	58.3	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

NE/NW/SW Sec. 27, T21S, R33E on Merchants Livestock Land

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD 421	Corky Glenn	Glenn's Water Well Service, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7/29/14	8/2/14	1192'	1192'	925'

COMPLETED WELL IS: (•) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 582'

DRILLING FLUID: ( ) AIR ( ) MUD ADDITIVES – SPECIFY:

DRILLING METHOD: (•) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER – SPECIFY:

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	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0'	40'	20"	16"	None	15 1/2"	.250	
0'	757'	14 3/4"	9 5/8"	Thread and Collar	.352	36 lbs.	none
757'	1192'	8 3/4'	7"	Thread and Collar	6.5"	23 lbs.	1/8"

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
0'	40'	20"	Cemented	2 yds	Top Pour
0'	757'	14 3/4"	Float and Shoe Cemented to Surface	1034	Circulated

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	Exp1	21S.33E.27.312			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'	4'	4'	Soil	○ Y ◉ N	
4'	28'	24'	Caleche	○ Y ◉ N	
28'	120'	92'	Sand and Clay	○ Y ◉ N	
120'	260'	140'	Red Clay	○ Y ◉ N	
260'	757'	497'	Red and Brown Shale and Clay(some blue)	○ Y ◉ N	
757'	815'	58'	Red and Brown Shale	○ Y ◉ N	
815'	840'	25'	Blue Clay and Shale	○ Y ◉ N	
840'	925'	85'	Red and Brown Shale(some sandrock)	○ Y ◉ N	
925'	975'	50'	Watersand and Gravel	◉ Y ○ N	
975'	1185'	210'	Watersand(brown sandrock)	◉ Y ○ N	
1185'	1192'	7'	Red Shale	○ Y ◉ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ 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): 50

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:

0' to 757' drilled with mud. 757' to 1192' drilled with air and foam.

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

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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Corky Glenn — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

8/7/14 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1355	POD NUMBER	1	TRN NUMBER	549450
LOCATION	Exp1	21S.33E.27.312			PAGE 2 OF 2

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	Tws	Rng	X	Y
	CP 01356 POD1	4	2	2	33	21S	33E	634560	3590014

Driller License: 421 **Driller Company:** GLENN'S WATER WELL SERVICE

Driller Name: GLENN, CLARK A."CORKY"

Drill Start Date: 08/01/2014 **Drill Finish Date:** 08/09/2014 **Plug Date:**

Log File Date: 08/25/2014 **PCW Rcv Date:** **Source:** Artesian

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

Casing Size: 6.37 **Depth Well:** 1098 feet **Depth Water:** 555 feet

Water Bearing Stratifications:	Top	Bottom	Description
	765	795	Sandstone/Gravel/Conglomerate
	795	825	Shale/Mudstone/Siltstone
	825	920	Sandstone/Gravel/Conglomerate
	920	935	Shale/Mudstone/Siltstone
	935	968	Sandstone/Gravel/Conglomerate
	968	976	Shale/Mudstone/Siltstone
	976	1005	Sandstone/Gravel/Conglomerate
	1005	1092	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	735	1098

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
	CP 01357 POD1	4	3	1	27	21S	33E	634782	3591347

Driller License: 421 **Driller Company:** GLENN'S WATER WELL SERVICE

Driller Name: GLENN, CLARK A."CORKY"

Drill Start Date: 08/16/2014 **Drill Finish Date:** 08/26/2014 **Plug Date:**

Log File Date: 09/10/2014 **PCW Rcv Date:** **Source:** Artesian

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

Casing Size: 6.37 **Depth Well:** 1286 feet **Depth Water:** 578 feet

Water Bearing Stratifications:	Top	Bottom	Description
	945	960	Sandstone/Gravel/Conglomerate
	960	1077	Shale/Mudstone/Siltstone
	1077	1215	Sandstone/Gravel/Conglomerate
	1215	1286	Shale/Mudstone/Siltstone

Casing Perforations:	Top	Bottom
	846	1286

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).
CP-1701-POD1		

WELL OWNER NAME(S)	PHONE (OPTIONAL)
The Jimmy Mills GST and 2005 GST Trusts	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
c/o Stacey Mills PO Box 1359	Loving	NM	88256-1358

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	26	0.5	N
	LONGITUDE	103	39	10.1	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

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD1706	Bryce Wallace	Elite Drillers Corporation

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10/15/18	11/29/18	840	880	560

COMPLETED WELL IS: [x] ARTESIAN [ ] DRY HOLE [ ] SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 457

DRILLING FLUID: [x] AIR [ ] MUD ADDITIVES – SPECIFY:

DRILLING METHOD: [x] ROTARY [ ] HAMMER [ ] CABLE TOOL [ ] OTHER – SPECIFY:

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	20	12.75	ASTM53 Grade B Steel	N/A	12.57	.188	
+2	460	12.25	ASTM53 Grade B steel	Welded	6.065	.28	
460	840	12.25	SDR17 PVC	Spline	6	SDR17	.032

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
0	20	12.75	Portland I/II Cement	17	Pour
0	453	12.25	Baroid Benseal Grout	247	Trimmie
453	860	12.25	8/16 Silica Sand	285	Pour

FOR OSE INTERNAL USE WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. CP-1701	POD NO. 1	TRN NO. 619305	
LOCATION Exp1 215.32E.35.31		WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgf) FROM	DEPTH (feet bgf) 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	5	5	Topsoil	Y N	
5	8	3	Caliche	Y N	
8	80	72	Tan/Red sandy caliche	Y N	
80	190	110	Red clay	Y N	
190	400	210	Tan/Red sandstone	Y N	
400	560	160	Red siltstone	Y N	
560	575	15	Red siltstone/Gyp	✓ Y N	5.00
575	750	175	Red siltstone	Y N	
750	770	20	Red siltstone/Gyp	✓ Y N	25.00
770	840	70	Red siltstone	Y N	
840	880	40	Red Shale	Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				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): 30.00

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:

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

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 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Bryce Wallace — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

12/10/2018 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO.	CP-1701	POD NO.	1	TRN NO.	619305
LOCATION	Exp1 215.32E.35.31			WELL TAG ID NO.	—

PAGE 2 OF 2

Appendix C

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

September 09, 2019

ANDREW PARKER

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: ADVANCE ENERGY

Enclosed are the results of analyses for samples received by the laboratory on 09/03/19 16:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S1 WEST WALL 0-4'	H903035-01	Soil	03-Sep-19 13:50	03-Sep-19 16:20
S1 TRENCH WALL 6'	H903035-02	Soil	03-Sep-19 14:00	03-Sep-19 16:20
S1 TRENCH BASE 8'	H903035-03	Soil	03-Sep-19 14:10	03-Sep-19 16:20
HA - 01 5.5'	H903035-04	Soil	03-Sep-19 14:20	03-Sep-19 16:20
HA - 04 5.5'	H903035-05	Soil	03-Sep-19 14:30	03-Sep-19 16:20

Client changed sample ID on sample -05. This is the revised report and will replace the one sent on 09/04/19.

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

S1 WEST WALL 0-4'

H903035-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**48.0**		16.0	mg/kg	4	9090406	AC	04-Sep-19	4500-Cl-B	
Volatile Organic Compounds by EPA Method 8021										
Benzene*	<0.050		0.050	mg/kg	50	9090404	CK	04-Sep-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9090404	CK	04-Sep-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9090404	CK	04-Sep-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9090404	CK	04-Sep-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9090404	CK	04-Sep-19	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			*105 %*	*73.3-129*		*9090404*	CK	*04-Sep-19*	*8021B*	
Petroleum Hydrocarbons by GC FID										
GRO C6-C10*	<10.0		10.0	mg/kg	1	9090402	MS	04-Sep-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9090402	MS	04-Sep-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9090402	MS	04-Sep-19	8015B	
Surrogate: 1-Chlorooctane			*76.7 %*	*41-142*		*9090402*	MS	*04-Sep-19*	*8015B*	
Surrogate: 1-Chlorooctadecane			*83.3 %*	*37.6-147*		*9090402*	MS	*04-Sep-19*	*8015B*	

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

S1 TRENCH WALL 6'

H903035-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**32.0**		16.0	mg/kg	4	9090406	AC	04-Sep-19	4500-Cl-B	

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

S1 TRENCH BASE 8'

H903035-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**32.0**		16.0	mg/kg	4	9090406	AC	04-Sep-19	4500-Cl-B	

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

HA - 01 5.5'

H903035-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**48.0**		16.0	mg/kg	4	9090406	AC	04-Sep-19	4500-Cl-B	

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

HA - 04 5.5'

H903035-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**160**		16.0	mg/kg	4	9090406	AC	04-Sep-19	4500-Cl-B	

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9090406 - 1:4 DI Water										
Blank (9090406-BLK1)				Prepared & Analyzed: 04-Sep-19						
Chloride	ND	16.0	mg/kg							
LCS (9090406-BS1)				Prepared & Analyzed: 04-Sep-19						
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (9090406-BSD1)				Prepared & Analyzed: 04-Sep-19						
Chloride	416	16.0	mg/kg	400		104	80-120	3.77	20	

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9090404 - Volatiles										
Blank (9090404-BLK1)				Prepared & Analyzed: 04-Sep-19						
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	*0.104*		mg/kg	*0.100*		*104*	*73.3-129*			
LCS (9090404-BS1)				Prepared & Analyzed: 04-Sep-19						
Benzene	1.92	0.050	mg/kg	2.00		95.8	72.2-131			
Toluene	1.87	0.050	mg/kg	2.00		93.4	71.7-126			
Ethylbenzene	1.81	0.050	mg/kg	2.00		90.6	68.9-126			
Total Xylenes	5.61	0.150	mg/kg	6.00		93.6	71.4-125			
Surrogate: 4-Bromofluorobenzene (PID)	*0.0961*		mg/kg	*0.100*		*96.1*	*73.3-129*			
LCS Dup (9090404-BSD1)				Prepared & Analyzed: 04-Sep-19						
Benzene	1.89	0.050	mg/kg	2.00		94.6	72.2-131	1.33	6.91	
Toluene	1.89	0.050	mg/kg	2.00		94.6	71.7-126	1.33	7.12	
Ethylbenzene	1.85	0.050	mg/kg	2.00		92.6	68.9-126	2.10	7.88	
Total Xylenes	5.74	0.150	mg/kg	6.00		95.7	71.4-125	2.28	7.46	
Surrogate: 4-Bromofluorobenzene (PID)	*0.0965*		mg/kg	*0.100*		*96.5*	*73.3-129*			

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 901 RIO GRANDE BLVD SUITE F-142 ALBUQUERQUE NM, 87104	Project: ADVANCE ENERGY Project Number: WOOL HEAD 703H Project Manager: ANDREW PARKER Fax To: NONE	Reported: 09-Sep-19 10:02

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9090402 - General Prep - Organics										
Blank (9090402-BLK1)				Prepared & Analyzed: 04-Sep-19						
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	*43.3*		mg/kg	*50.0*		*86.5*	*41-142*			
Surrogate: 1-Chlorooctadecane	*48.0*		mg/kg	*50.0*		*96.0*	*37.6-147*			
LCS (9090402-BS1)				Prepared & Analyzed: 04-Sep-19						
GRO C6-C10	203	10.0	mg/kg	200		101	76.5-133			
DRO >C10-C28	212	10.0	mg/kg	200		106	72.9-138			
Total TPH C6-C28	415	10.0	mg/kg	400		104	78-132			
Surrogate: 1-Chlorooctane	*50.4*		mg/kg	*50.0*		*101*	*41-142*			
Surrogate: 1-Chlorooctadecane	*53.8*		mg/kg	*50.0*		*108*	*37.6-147*			
LCS Dup (9090402-BSD1)				Prepared & Analyzed: 04-Sep-19						
GRO C6-C10	195	10.0	mg/kg	200		97.6	76.5-133	3.69	20.6	
DRO >C10-C28	207	10.0	mg/kg	200		104	72.9-138	2.38	20.6	
Total TPH C6-C28	402	10.0	mg/kg	400		101	78-132	3.02	18	
Surrogate: 1-Chlorooctane	*49.1*		mg/kg	*50.0*		*98.2*	*41-142*			
Surrogate: 1-Chlorooctadecane	*54.6*		mg/kg	*50.0*		*109*	*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

Notes and Definitions

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
Project Manager:	Andrew Parker
Address:	On File
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Advance Energy
Project Location:	Wool Head 703 H
Sampler Name:	JACOB SAENZ / Andrew Parker

BILL TO

P.O. #:	
Company:	RT Hicks
Attn:	on-file
Address:	Mail to
City:	ABQ
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

Chloride | * | BTEX, TPH (GRO, DRO, MRO)

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	*	BTEX, TPH (GRO, DRO, MRO)
H903035																	
1	S1 West Wall 0-4FT	C	1			X					X		9/3	1:50pm	X		X
2	S1 Trench Wall 6Ft	G	↓			↓					↓		↓	2:00pm	↓		
3	S1 Trench Base 8Ft	G												2:10pm			
4	~~HA-02~~ HA-01 5.5FT	G												2:20pm			
* 5	HA-~~02~~ 04 5.5Ft	G	↓			↓					↓		↓	2:30pm	↓		

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: 9/3/19	Received By:	
	Time: 16:20		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One) 13.8° #97
Sampler - UPS - Bus - Other: Corrected 14.2°

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

CHECKED BY: (Initials) TO

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS: * Sample ID revised as per Andrew. 09/09/19 CH

RFN

CARDINAL Laboratories

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

September 09, 2019

ANDREW PARKER

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: ADVANCE ENERGY

Enclosed are the results of analyses for samples received by the laboratory on 09/06/19 8:36.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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:	09/06/2019	Sampling Date:	09/05/2019
Reported:	09/09/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H (703H)	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 1 BASE 5.5' (H903079-01)

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	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 1 S. WALL 0-4' (H903079-02)

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	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 1 N. WALL 0-4' (H903079-03)

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	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 2 BASE 5' (H903079-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/06/2019	ND	400	100	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

Analytical Results For:

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

Received:	09/06/2019	Sampling Date:	09/05/2019
Reported:	09/09/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H (703H)	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 2 S. WALL 0-4' (H903079-05)

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	09/06/2019	ND	400	100	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

Analytical Results For:

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

Received:	09/06/2019	Sampling Date:	09/05/2019
Reported:	09/09/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H (703H)	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 2 N. WALL 0-4' (H903079-06)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/06/2019	ND	2.00	100	2.00	8.02	
Toluene*	<0.050	0.050	09/06/2019	ND	1.97	98.7	2.00	4.46	
Ethylbenzene*	<0.050	0.050	09/06/2019	ND	2.04	102	2.00	6.60	
Total Xylenes*	<0.150	0.150	09/06/2019	ND	6.15	103	6.00	7.01	
Total BTEX	<0.300	0.300	09/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *86.8 %* *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	**160**	16.0	09/06/2019	ND	400	100	400	0.00	

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	09/06/2019	ND	205	103	200	0.162	
DRO >C10-C28*	<10.0	10.0	09/06/2019	ND	212	106	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	09/06/2019	ND					

Surrogate: 1-Chlorooctane *84.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *88.0 %* *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:	09/06/2019	Sampling Date:	09/05/2019
Reported:	09/09/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H (703H)	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S- 3 BASE 5.5' (H903079-07)

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	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 3 S. WALL 0-4' (H903079-08)

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	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 3 N. WALL 0-4' (H903079-09)

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	09/06/2019	ND	400	100	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

Analytical Results For:

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

Received:	09/06/2019	Sampling Date:	09/05/2019
Reported:	09/09/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H (703H)	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S- 6 BASE 4.5' (H903079-10)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/06/2019	ND	2.00	100	2.00	8.02	
Toluene*	<0.050	0.050	09/06/2019	ND	1.97	98.7	2.00	4.46	
Ethylbenzene*	<0.050	0.050	09/06/2019	ND	2.04	102	2.00	6.60	
Total Xylenes*	<0.150	0.150	09/06/2019	ND	6.15	103	6.00	7.01	
Total BTEX	<0.300	0.300	09/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.8 %* *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	**448**	16.0	09/06/2019	ND	400	100	400	0.00	

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	09/06/2019	ND	205	103	200	0.162	
DRO >C10-C28*	<10.0	10.0	09/06/2019	ND	212	106	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	09/06/2019	ND					

Surrogate: 1-Chlorooctane *86.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.5 %* *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:	09/06/2019	Sampling Date:	09/05/2019
Reported:	09/09/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H (703H)	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 6 S. WALL 0-4' (H903079-11)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	09/06/2019	ND	400	100	400	0.00	

Sample ID: S- 7 BASE 4.5' (H903079-12)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 7 S. WALL 0-4' (H903079-13)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 7 N. WALL 0-4' (H903079-14)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	09/06/2019	ND	400	100	400	0.00	

Sample ID: S- 9 BASE 2.5' (H903079-15)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/06/2019	ND	400	100	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

Analytical Results For:

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

Received:	09/06/2019	Sampling Date:	09/05/2019
Reported:	09/09/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H (703H)	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 9 E. WALL 0-2' (H903079-16)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 9 S. WALL 0-2.5' (H903079-17)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/06/2019	ND	400	100	400	0.00	

Sample ID: S - 9 N. WALL 0-2.5' (H903079-18)

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	09/06/2019	ND	400	100	400	0.00	

Sample ID: S- 11 BASE 1' (H903079-19)

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	09/06/2019	ND	400	100	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

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	**BILL TO**
Project Manager: Andrew Parker	P.O. #:
Address: 9N File	Company: R.T. Hicks
City: State: Zip:	Attn: Mail to AB2
Phone #: Fax #:	Address: Office
Project #: Project Owner:	City:
Project Name: Advance Energy	State: Zip:
Project Location: Wool Head 703 H (703H)	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	ANALYSIS REQUEST: Chloride	BTEX, TPH (GRO,DRO, MRO)
H903079																
1	S-1 Base 5.5 Ft	C	1			X					X		9/5	8am	X	
2	S-1 S. WALL 0-4FT													8:10am		
3	S-1 N. WALL 0-4FT													8:20am		
4	S-2 Base 5FT													8:30am		
5	S-2 S. Wall 0-4FT													8:40am		
6	S-2 N. Wall 0-4FT													8:50am		X
7	S-3 Base 5.5FT													9am		
8	S-3 S. Wall 0-4FT													9:10am		
9	S-3 N. Wall 0-4FT													9:20am		
10	~~S-4~~ S-6 Base 4.5FT													9:30am		X

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: 9/6/19	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 9:36		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: RFN
	Time:		
Delivered By: (Circle One) -9.9c #97	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TO.	
Sampler - UPS - Bus - Other: Corrected -9.5c			

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	**BILL TO**
Project Manager: Andrew Parker	P.O. #:
Address: ON File	Company: R. T. Hicks
City: State: Zip:	Attn: Mail to ABQ
Phone #: Fax #:	Address: office
Project #: Project Owner:	City:
Project Name: Advance Energy	State: Zip:
Project Location: Wool Head 20317 (20317)	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	ANALYSIS REQUEST: Chloride
H903079															
11	S-6 S. Wall 0-4Ft	C	1			X					X		9/5	9:40am	
12	S-7 Base 4.5Ft													9:50am	
13	S-7 S. Wall 0-4Ft													10am	
14	S-7 N. Wall 0-4Ft													10:10am	
15	S-9 Base 2.5Ft													10:20am	
16	S-9 E. Wall 0-2.5Ft													10:30am	
17	S-9 S. Wall 0-2.5Ft													10:40am	
18	S-9 N. Wall 0-2.5Ft													10:50am	
19	S-11 Base 1Ft													11am	

Relinquished By:	Date: 9/6/19	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 8:35am	Tamara Oldaker	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: RFN
	Time:		
Delivered By: (Circle One) -9.9° #197	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TO	
Sampler - UPS - Bus - Other: Corrected -9.5°			

CARDINAL Laboratories

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

September 10, 2019

ANDREW PARKER

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: ADVANCE ENERGY

Enclosed are the results of analyses for samples received by the laboratory on 09/10/19 8:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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:	09/10/2019	Sampling Date:	09/09/2019
Reported:	09/10/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 4 BASE 3' (H903106-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 4 N. WALL 0-3' (H903106-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 4 S. WALL 0-3' (H903106-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/10/2019	ND	416	104	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:	09/10/2019	Sampling Date:	09/09/2019
Reported:	09/10/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 4 W WALL 0-3' (H903106-04)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.07	
Toluene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.29	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.15	108	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.52	109	6.00	1.83	
Total BTEX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.3 %* *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	**32.0**	16.0	09/10/2019	ND	416	104	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane *82.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *87.6 %* *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:	09/10/2019	Sampling Date:	09/09/2019
Reported:	09/10/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 5 BASE 4-5' (H903106-05)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.07	
Toluene*	<0.050	0.050	09/10/2019	ND	2.10	105	2.00	1.29	
Ethylbenzene*	<0.050	0.050	09/10/2019	ND	2.15	108	2.00	1.28	
Total Xylenes*	<0.150	0.150	09/10/2019	ND	6.52	109	6.00	1.83	
Total BTEX	<0.300	0.300	09/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.5 %* *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	**128**	16.0	09/10/2019	ND	416	104	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	09/10/2019	ND	191	95.3	200	1.54	
DRO >C10-C28*	<10.0	10.0	09/10/2019	ND	200	100	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	09/10/2019	ND					

Surrogate: 1-Chlorooctane *80.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *84.2 %* *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:	09/10/2019	Sampling Date:	09/09/2019
Reported:	09/10/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 5 N. WALL 0-4' (H903106-06)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 5 S. WALL 0-4' (H903106-07)

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	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 6 N. WALL 0-4' (H903106-08)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S- 10 BASE 4.5' (H903106-09)

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	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 10 N. WALL 0-4' (H903106-10)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/10/2019	ND	416	104	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:	09/10/2019	Sampling Date:	09/09/2019
Reported:	09/10/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 10 E. WALL 0-4' (H903106-11)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 10 S. WALL 0-4' (H903106-12)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 12 BASE 5' (H903106-13)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 12 N. WALL 0-4' (H903106-14)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/10/2019	ND	416	104	400	3.77	

Sample ID: S - 12 S. WALL 0-4' (H903106-15)

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	09/10/2019	ND	416	104	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

Analytical Results For:

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

Received:	09/10/2019	Sampling Date:	09/09/2019
Reported:	09/10/2019	Sampling Type:	Soil
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: S - 8 BASE 5' (H903106-16)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**704**	16.0	09/10/2019	ND	416	104	400	0.00	

Sample ID: S - 8 N. WALL 0-4' (H903106-17)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/10/2019	ND	416	104	400	0.00	

Sample ID: S - 8 S. WALL 0-4' (H903106-18)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/10/2019	ND	416	104	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

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

Page 9 of 10

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	RT Hicks
Project Manager:	Andrew Parker
Address:	ON FILE
City: State: Zip:	
Phone #: Fax #:	
Project #: Project Owner:	
Project Name:	Advance Energy
Project Location:	Wool Head 703H
Sampler Name:	JACOB SAENZ

BILL TO

P.O. #:	
Company:	R.T. Hicks
Attn:	Send to ABA
Address:	office
City:	
State: Zip:	
Phone #:	
Fax #:	

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride	BTEX	GRO, DRO, MRO TPH
H903106 1	S-4 BASE 3FT	C	1			X					X		9/9/19	8:30am	X		
2	S-4 N. WALL 0-3FT													8:40am			
3	S-4 S. WALL 0-3FT													8:50am			
4	S-4 W. WALL 0-3FT													9am		X	X
5	S-5 BASE 4.5FT													9:10am		X	X
6	S-5 N. WALL 0-4FT													9:20am			
7	S-5 S. WALL 0-4FT													9:30am			
8	S-6 N. WALL 0-4FT													9:40am			
9	S-10 BASE 4.5FT													9:50am			
10	S-10 N. WALL 0-4FT													10am			

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: [signature] Date: 9/10/19 Time: 8:35am Received By: Tamara Oldaker

Relinquished By: Date: Time: Received By:

Delivered By: (Circle One) -3.3°C #97
Sampler - UPS - Bus - Other: Corrected -2.9°C

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

CHECKED BY: (Initials) TO.

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

1-2

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: RT Hicks	**BILL TO**		ANALYSIS REQUEST
Project Manager: Andrew Parker	P.O. #:		
Address: On File	Company: Atlas T. Hicks		
City: State: Zip:	Attn: Send to ABQ		
Phone #: Fax #:	Address: Office		
Project #: Project Owner:	City:		
Project Name: Advance Energy	State: Zip:		
Project Location: Wool Head 703H	Phone #:		
Sampler Name: SAGED 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
H903106															
11	S-10 E. WALL 0-4Ft	C	1			X					X		9/9/19	10:10am	X
12	S-10 S. WALL 0-4Ft													10:20am	
13	S-12 BASE 5Ft													10:30am	
14	S-12 N. WALL 0-4Ft													10:40am	
15	S-12 S. WALL 0-4Ft													10:50am	
16	S-8 BASE 5Ft													11am	
17	S-8 N. WALL 0-4Ft													11:10am	
18	S-8 S. WALL 0-4Ft													11:20am	

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: 9/10/19	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 8:35am	Tamara Oldaker	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: RFN
	Time:		
Delivered By: (Circle One) -3.3° #97	Sample Condition: Cool ☑ Yes ☐ No / Intact ☑ Yes ☐ No	CHECKED BY: (Initials) T.O.	
Sampler - UPS - Bus - Other: Corrected -2.8°			2-2

CARDINAL Laboratories

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

October 09, 2019

ANDREW PARKER

R T HICKS CONSULTANTS

901 RIO GRANDE BLVD SUITE F-142

ALBUQUERQUE, NM 87104

RE: ADVANCE ENERGY

Enclosed are the results of analyses for samples received by the laboratory on 10/03/19 9:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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:	10/03/2019	Sampling Date:	10/02/2019
Reported:	10/09/2019	Sampling Type:	Water
Project Name:	ADVANCE ENERGY	Sampling Condition:	Cool & Intact
Project Number:	WOOL HEAD 703H	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: W.H. 703 H (H903373-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**32.0**	4.00	10/03/2019	ND	104	104	100	0.00	

TDS 160.1 mg/L **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**248**	5.00	10/07/2019	ND	525	99.6	527	5.11	

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

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
Project Manager:	Andrew Hicks
Address:	On File
City:	State: Zip:
Phone #:	Fax #:
Project #:	Project Owner:
Project Name:	Advance Energy
Project Location:	Wool Head 703H
Sampler Name:	Zach Goetz

BILL TO

P.O. #:	
Company:	R.T. Hicks
Attn:	Send to ABQ
Address:	Office
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER : Rain water	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chloride	TDS
H903373-1	W.H. 703H	C	1						X		X		10/2/19	7pm	✓	✓

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: 10/3/19	Received By:	
	Time: 0930		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One) 4.9° #197
Sampler - UPS - Bus - Other: Corrected 5.3°

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

CHECKED BY: (Initials) TO.

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

RFN - chloride