

From: [Yu, Olivia, EMNRD](#)
To: [Andrew Parker](#)
Cc: [Billings, Bradford, EMNRD](#); [Hernandez, Christina, EMNRD](#); "[Bradley Blevins](#)"; "[David Harwell](#)"; "[Jimmy Smith](#)"; "[Clabe Pearson](#)"; r@rthicksconsult.com; [Christopher Cortez](#)
Subject: RE: Advance Energy - 1RP-4953
Date: Monday, July 30, 2018 5:22:00 PM

Mr. Parker:

Please be advised that in the interest of completing vertical delineation for 1RP-4953, with depth to groundwater West of the greater than 100 ft. bgs, although between 50-99 ft. bgs East of West Merchant release location (USGS 322641103311201), the 600 mg/kg chlorides maintained for 10 ft. in depth would not be required. NMOCD would accept 600 mg/kg obtained and maintained for 4 ft. further in depth.

Please confirm or inform for clarification.

Thanks,
Olivia

From: Andrew Parker <andrew@rthicksconsult.com>
Sent: Friday, June 29, 2018 1:25 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>; 'Bradley Blevins' <bblevins5252@gmail.com>; 'David Harwell' <DHarwell@advanceenergypartners.com>; 'Jimmy Smith' <altech@pvt.n.net>; 'Clabe Pearson' <Clabe@merchantlivestock.com>; r@rthicksconsult.com; Christopher Cortez <chris@atkinseng.com>
Subject: RE: Advance Energy - 1RP-4953

Ms. Yu

Attached are maps showing the proposed boring locations (with total depth) and excavation areas for the following locations:

- Battle 34 Site
- West of Merchant
- Latitude 32 26 50
- East of Battle 34.

Please note that additional characterization at East of Battle 34 is necessary. Characterization will consist of obtaining one deep sample to approximately 20-feet and four additional borings at the four cardinal extents of the release mapped by Merchant Cattle in January 2018.

At all sites, vertical delineation will occur at the deep boring (pooling area) until field chloride titrations are below 600 mg/kg for 10-feet or to a depth of approximately 20 to 30-feet. Soil samples will be collected and field titrated for chloride every 2 feet below ground surface. Soil

samples will be submitted for laboratory confirmation at 4-ft and total depth.

The drilling contractor (Atkins Engineering) will visit the locations next week to evaluate whether the powerlines, road cuts, and pipelines interfere with the proposed locations and to identify any access constraints for the drill rig. Atkins will make recommendations on relocating the proposed boreholes to avoid any utilities. After Atkins evaluation, we will determine whether trench sampling for the shallow (4-ft) proposed borings for horizontal delineation is more suitable.

Andrew Parker
R.T. Hicks Consultants
Durango Field Office
970-570-9535

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Friday, June 29, 2018 7:28 AM
To: Andrew Parker
Cc: Billings, Bradford, EMNRD; Hernandez, Christina, EMNRD; 'Bradley Blevins'; 'David Harwell'; 'Jimmy Smith'; 'Clabe Pearson'; r@rthicksconsult.com
Subject: RE: Advance Energy - 1RP-4953

Good morning Mr. Parker:

Thank you for the update regarding the status of completion of release characterization for 1RP-4953. In response to Mr. Hicks's email dated June 20, 2018, NMOCD will assume that the proposed removal of impacted soil above the caliche layer, before situating the drilling rig for additional vertical delineation, is valid based on professional judgement.

Thanks,
Olivia

From: Andrew Parker <andrew@rthicksconsult.com>
Sent: Thursday, June 28, 2018 3:57 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>; 'Bradley Blevins' <bblevins5252@gmail.com>; 'David Harwell' <DHarwell@advanceenergypartners.com>; 'Jimmy Smith' <altech@pytn.net>; 'Clabe Pearson' <Clabe@merchantlivestock.com>; r@rthicksconsult.com
Subject: RE: Advance Energy - 1RP-4953

Ms. Yu:

I am working on scheduling a drill rig to further delineate the above referenced location in mid-July. The drill rig may not be available until late-July. Early next week I will send you proposed borehole locations plotted on an aerial photo. Boreholes were determined using your June 8th (see below) email as guidance and past delineation activities. Our preference is to obtain additional delineation

data prior to remediation activities.

Andrew Parker
R.T. Hicks Consultants
Durango Field Office
970-570-9535

From: Clabe Pearson [<mailto:Clabe@merchantlivestock.com>]
Sent: Friday, June 08, 2018 4:48 PM
To: r@rthicksconsult.com
Cc: Olivia Yu; Billings, Bradford, EMNRD; Hernandez, Christina, EMNRD; Bradley Blevins; David Harwell; Andrew Parker; Jimmy Smith
Subject: Re: Advance Energy - 1RP-4953

The Surface Owner has not agreed to an excavation of 4-feet and the installation of a 20 mil liner.

The spills were discovered on or about 1-17-2018. Had excavation begun immediately upon the discovery of the spills the clean up would have been minimal and at minimal expense to Advance Energy. Several rains and five months of time have driven the contamination deeper and further both horizontally and vertically.

Upon discovery of the spills the Surface Owner requested delineation to define both horizontal and vertical extent. If the spills had been addressed in a timely fashion, vertical extent would probably have been less than the four foot proposal.

The Surface Owner is strongly opposed to the submitted proposed remediation plan.

Thank you,

Clabe Pearson
President
The Merchant Livestock Company (Surface Owner)

On Jun 8, 2018, at 3:36 PM, Randall Hicks <r@rthicksconsult.com> wrote:

Ms. Yu

Advance Energy has communicated with the surface owner regarding this release. Advance agrees

- excavate to 4-feet and install a properly keyed minimal 20 mil liner
- sample each excavated area by discrete bottom and sidewall samples, at no greater than 75 ft.
- That confirmation sample locations will be clearly marked on scaled

maps with GPS coordinates

- To submit samples to Cardinal Laboratory for analysis of chloride with at least one bottom sample from each excavation evaluated for hydrocarbons.

Delineation below 4 feet does not change the remedy. To conduct delineation consistent with guidance of Mr. Griswold requires mobilization of a drill rig, more time and expense that provides no value. Because the releases occurred on undisturbed ground (i.e. the releases are a one-time event) and depth to groundwater exceeds 150 feet we are confident that the plan conforms to the Rule, albeit not with the state-wide guidance of Mr. Griswold.

Therefore, we request that OCD approve the proposed remediation plan with the condition that the excavations include the keyed 20-mil liner.

Field analyses of samples of hard caliche at or above 4-feet may show that chloride does not exceed 600 mg/kg. Additionally, the hard caliche may require blasting to meet the 4-foot mandate. If we encounter hard caliche above 4-feet, we will

- Collect bottom samples for field analysis
- confer with the surface owner
- develop a proposed alternative to excavation to 4-feet and
- communicate the alternative to OCD prior to backfilling.

Thank you for your consideration and have a good weekend.

Randall Hicks
R.T. Hicks Consultants
Cell: 505-238-9515
Office: 505-266-5004

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Friday, June 8, 2018 11:14 AM
To: Randall Hicks; Billings, Bradford, EMNRD; Hernandez, Christina, EMNRD
Cc: clabe@merchantlivestock.com; bblevins5252@gmail.com; 'David Harwell'; 'Andrew Parker'; altech@pvt.net

Subject: RE: Advance Energy - 1RP-4953

Good morning Mr. Hicks:

As previously mentioned, NMOCD abides by current guidelines. The second question will be addressed first as it relates to completion of delineation, then proposed remediation.

1. In general, completion of vertical delineation with samples from a soil bore is determined by the preliminary dataset. As 1RP-4953 encompasses 4 releases over 3 release locations, at least one soil bore for each release location will be required to complete release characterization. In addition to any identified pooling locations, soil bores are expected based on the provided data at:
 - a. Battle 34- area represented by TB1/B2/T4. Horizontal delineation will need to be completed northward of T4 North. Area represented by B3 can be evaluated to complete vertical delineation using a drilling rig or test trench.
 - b. West of Merchant- Area represented by T2.
 - c. Latitude 32 26 50- Area represented by release point, BH1, and BH2. Horizontal delineation needs to be completed East and South of the S of RP sample location. The sample location Road NW can be further delineated vertically using a drilling rig or test trench.
2. Once delineation is completed, then a 4 ft. maximum excavation may be approved as the proposed remedial activity. If the delineation data indicate chloride-impacted soil deeper than 4 ft, then a properly keyed minimal 20 mil liner will be required. In addition, each excavated area must have laboratory analyses of discrete bottom and sidewall samples, at no greater than 75 ft. apart. Confirmation sample locations must be clearly marked on scaled maps with GPS coordinates.

Please be advised that averaging of field data of soil samples from different depths are not per conventional protocol. Nonetheless, the determination of permissible chloride levels remaining in situ is through laboratory analyses of discrete soil samples from identified depths of the bottom and sidewalls of the excavated areas.

Thanks,
Olivia

From: Randall Hicks <r@rthicksconsult.com>

Sent: Wednesday, June 6, 2018 4:35 PM

To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>

Cc: clabe@merchantlivestock.com; bblevins5252@gmail.com; 'David Harwell' <DHarwell@advanceenergypartners.com>; 'Andrew Parker' <andrew@rthicksconsult.com>; altech@pytn.net

Subject: RE: Advance Energy - 1RP-4953

Ms. Yu

We have two questions in yellow highlight for your consideration. Advance does not intend to wait until August to submit a revised plan (as allowed in the Transitional Provisions of the proposed Rule) and then implement a remedy sometime in October.

Would OCD approve the proposed dig-haul-dispose remedy (to a depth of no more than 4-feet) and agree to the completion of the characterization in accordance to the guidance of Mr. Griswold (600 mg/kg) as we proceed with the remedy? Upon completion of the remedy, Advance would submit a Closure Report with the characterization data following the sampling protocol defined by the new Rule (which is quite exhaustive).

Although vertical characterization to define a 10-foot interval where chloride concentrations are less than 600 mg/kg will not provide any data that would change the proposed remedy (Table 1 criteria), Advance is willing to provide that data to OCD and the surface owner in order to move the process forward. A drilling rig or an excavator will be required to collect samples as a backhoe is unable to penetrate the caliche or obtain the depth required for the characterization currently mandated by guidance. We have been told by OCD Santa Fe that vertical delineation is considered acceptable if the data are derived from the area of release or pooling. In other words, we need to provide vertical delineation at only one location at a given release. Is this the case with OCD District 1?

I was present at the first day of the Spill Rule hearing. While the Commission will change some wording of the proposed Rule, the main tenants of the proposed Rule will remain in place. Thus, the experts at OCD are and the Commission appears to be supporting the closure criteria established by Table 1 of the new Rule. Additionally, I believe that laboratory methods for chloride analysis will be expanded to include Method 4500.

Thanks for your consideration.

Randall Hicks
R.T. Hicks Consultants
Cell: 505-238-9515
Office: 505-266-5004

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Wednesday, May 23, 2018 1:00 PM
To: Randall Hicks; Billings, Bradford, EMNRD
Cc: clabe@merchantlivestock.com; bblevins5252@gmail.com; David Harwell; 'Andrew Parker'; altech@pvt.net
Subject: RE: Advance Energy - 1RP-4953

Mr. Hicks:

In general, delineation is incomplete for 1RP-4953 under the current guideline for permissible chloride levels of 600 mg/kg.

Olivia

From: Randall Hicks <r@rthicksconsult.com>
Sent: Monday, April 30, 2018 2:24 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: clabe@merchantlivestock.com; bblevins5252@gmail.com; David Harwell <DHarwell@advanceenergypartners.com>; 'Andrew Parker' <andrew@rthicksconsult.com>; altech@pvt.net
Subject: Advance Energy - 1RP-4953

Ms. Yu

Attached is the Remediation Plan for the above-referenced site. We believe you will find that the report complies with the existing Rule 29 as well as the proposed Rule.

Please contact David Harwell or me if you have any questions.

Randall Hicks
R.T. Hicks Consultants
Cell: 505-238-9515
Office: 505-266-5004

From: [Yu, Olivia, EMNRD](#)
To: [Randall Hicks](#); andrew@rthicksconsult.com; "David Harwell"
Cc: bblevins5252@gmail.com; [Billings, Bradford, EMNRD](#)
Subject: RE: Memo of observations during staking 1RP-4953 - Produced Water Releases
Date: Monday, July 30, 2018 5:27:00 PM

Mr. Hicks:

Acknowledged. See email response to 1RP-4953 proposed delineation locations, regarding vertical depth of data.

Thanks,
Olivia

From: Randall Hicks <r@rthicksconsult.com>
Sent: Monday, July 30, 2018 5:07 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; andrew@rthicksconsult.com; 'David Harwell' <DHarwell@advanceenergypartners.com>
Cc: bblevins5252@gmail.com; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Subject: RE: Memo of observations during staking 1RP-4953 - Produced Water Releases

[Olivia et al](#)

Andrew is on the road and he will attempt to use earth moving equipment beneath the power lines to get deeper samples. It should be possible to get sufficient information to provide a floor to the impact. These are all what I call single event releases – in that they are neither long-term pipeline leaks nor leaking tanks. So we do not expect much penetration will be required at these two sites.

At the Battle 34 site at the road junction, we can find a place where we can drill and obtain the data. So too with the West of Merchant Pit site.

Randall Hicks
R.T. Hicks Consultants
Cell: 505-238-9515
Office: 505-266-5004

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Monday, July 30, 2018 5:03 PM
To: andrew@rthicksconsult.com; 'David Harwell'
Cc: 'Randall Hicks'; bblevins5252@gmail.com; Billings, Bradford, EMNRD
Subject: RE: Memo of observations during staking 1RP-4953 - Produced Water Releases

Mr. Parker:

In reviewing the data previously submitted, for 1RP-4953, if not mistaken, the deepest depth of delineation at all 3 locations is 7 ft. bgs (Latitude 32 26 50 area to 5 ft. bgs). Since vertical delineation via drilling rig is not feasible, could the completion of vertical delineation be conducted through some modification of a trackhoe? Or are other access issues aside from power lines within 20 ft. of the release areas?

Thanks,
Olivia

From: andrew@rthicksconsult.com <andrew@rthicksconsult.com>
Sent: Friday, July 27, 2018 12:49 PM
To: 'David Harwell' <DHarwell@advanceenergypartners.com>
Cc: 'Randall Hicks' <r@rthicksconsult.com>; Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; bblevins5252@gmail.com
Subject: Memo of observations during staking 1RP-4953 - Produced Water Releases; 1RP-4778 Tomahawk SWD; 1RP-4821 - Coop 6 State Com Battery (1H)

David:

Attached is a summary of observations I made during the staking for the excavation and drilling at the above referenced locations. Of the 21 boreholes requested by NMOCD, 10 cannot be drilled due to overhead powerlines. The remaining 2 boreholes (COOP 6 location which is on State land) will disturb an area with vegetation.

We will begin excavation/restoration work on Tuesday July 31st. Drilling for vertical delineation is delayed due to scheduling issues with the rig and is planned to commence on Wednesday afternoon of August 8th.

FYI: I made contact with Tanmar. They will be present on the 31st.

Andrew Parker
R.T. Hicks Consultants
Durango Field Office
Cell: (970) 570-9535

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW
Suite F-142
Albuquerque, NM 87104
505-266-5004 andrew@ rthicksconsult.com

Memo

To: David Harwell (Advanced Energy)
From: Andrew Parker
CC: Ms. Yu (NMOCD)
Date: July 27, 2018
Re: 1RP-4953 – Produced Water Releases; 1RP-4778 Tomahawk SWD;
1RP-4821 – Coop 6 State Com Battery (1H)

Below is a summary of observations made during the staking of boreholes and excavation locations for the 811 one-call. Powerlines and flowlines restrict access to about half of the proposed boreholes. The drill rig is required to have 20 horizontal feet of clearance between the borehole location and overhead powerlines. Moving the borehole location places the borehole beyond the release extent. Vertical delineation will be limited to the backhoe vertical extent during excavation.

Table 1: Summary of proposed borehole delineation restrictions.

Location	Borehole	Comments
Battle 34	Battle 34 North Battle 34 Pooling	Cannot drill due to overhead powerlines and pipelines. Moving borehole locations will place borehole beyond excavation extent.
E. of Battle 34	E. of Battle 34 Pooling Southwest Southeast	Cannot drill due to overhead powerlines. Moving borehole locations will place borehole beyond excavation extent.
Latitude (32 26 50)	32 26 50 Pooling 32 26 50 East 32 26 50 South	Cannot drill due to overhead powerlines. Moving borehole locations will place borehole beyond excavation extent.
W. of Merchant	No issues	No issues
Tomahawk SWD	HA-250 South	BLM surface. Will have to grade into undisturbed ground to center drill rig on release in road ditch. Will cause more surface disturbance than necessary to delineate extent of release along roadway.
COOP 6 State	SP-16	SLO surface. Cannot drill due to buried pipeline.
COOP 6 State	SP-21	SLO surface. Drill rig will cause more surface damage than good access the location. Suggest surface restoration of hydrocarbon impact at surface.
COOP 6 State	SP-26	SLO surface. Area shows no signs of impact from release. Mobilize a drill rig will cause unnecessary surface disturbance. Surrounding area has good surface vegetation.

Battle 34 & East of Battle 34 [1RP-4953]

Exhibit M1 shows the “Battle 34” and “East of Battle 34” relative to overhead powerlines and surface flowlines. Boreholes Battle 34 North, Battle 34 Pooling, Southwest, Southeast, and East of Battle 34 Pooling cannot be drilled as requested by NMOCD. These boreholes are either directly below an overhead powerline or within 20-feet of a powerline. Therefore, vertical delineation is not possible in these areas. Surface restoration will occur on the upper four feet or to the extent practical, whichever is less – with a liner placed at total-depth.

At the Battle 34 location, one borehole for vertical delineation can be drilled at the southern extent of the 4-foot excavation depth that is within the release area. At the East of Battle 34 location, drilling E. of Battle 34 Pooling may be possible if the drill rig can access the location which is on top of a sandhill.

Furthermore, Figures M1 & M2 shows the area is undergoing natural revegetation with the exception of the areas outlined by a red circle, which is suitable for one borehole for vertical delineation. Figure M3 shows the powerlines and flowlines that restrict drilling access at East of Battle 34.



Figure M 1: Photograph viewing south along access road. The red circle is a potential location for one borehole for vertical delineation that is within the spill release area. The remaining spill area is undergoing natural revegetation. Numerous on-surface flowlines cross the area.



Figure M 2: Photograph viewing west-southwest along the east-west extent of spill area. The red circle is the same area as shown in Figure M1.



Figure M 3: Photograph at E. of Battle 34, viewing east. Proposed boring Southwest (foreground) and Southeast (background, orange circle) are identified by pink flagging. Powerlines are directly overhead. Drill rig requires 20-feet of clearance from powerlines.

Latitude (32 26 50) [1RP-4953]

Exhibit M2 shows the Latitude location relative to overhead powerlines and surface flowlines. Boreholes 32 26 50 Pooling, 32 26 50 East, and 32 26 50 South cannot be drilled as requested by NMOCD. These boreholes are either directly below an overhead powerline or within 20-feet of a powerline. Therefore, vertical delineation is not possible in these areas. Surface restoration will occur on the upper four feet or to the extent practical, whichever is less – with a liner placed at total-depth.

Figure M4 shows the powerlines and flowlines that restrict drilling access for the three boreholes referenced above.



Figure M 4: Photograph viewing west along powerline/pipelines. Powerlines and flowlines restrict access to drill rig. Proposed boreholes are identified with pink flagging (see orange circles). From left to right : 32 26 50 South, 32 26 50 East, and 32 26 50 Pooling.

West of Merchant [1RP-4953]

Exhibit M3 shows the W. of Merchant location relative to the release extent. No obstructions exist at this location. Figure M5 shows the southern proposed excavation area during our July 2018 staking. Figure M6 shows the southern release extent from the March 2018 sampling. The green circle identifies a mesquite bush present in both figures for perspective. The southern release extent is beginning to undergo natural revegetation as shown in Figure M5.



Figure M 5: Photograph of the southern release extent viewing north-northeast. The release extent shows signs of natural revegetation. The green circled mesquite bush is the same bush show in Figure M 6.



Figure M 6: Photograph of the southern release extent viewing east-northeast. The dark green pin flag (photo center) is the location of a March 2018 sample point. The green circled mesquite bush is the same bush in Figure M 5.

Tomahawk SWD [1RP-4778]

Exhibit M4 shows the Tomahawk SWD location relative to the tank battery and well pad. Sample HA-250 along the roadside ditch may not be accessible without grading an area along the west side of the road (Figure M7), which is on BLM surface. Figure M8 shows the area around HA-4 (Trench 4). This area is undergoing natural revegetation and does not need to be restored. Furthermore, it lies within a drainage.

Figure M9 shows excavated material from the March 2018 sampling event from the area within Trench 5. The excavated material will be removed and the area restored.



Figure M 7: Photo along BLM access road viewing south toward HA-250 borehole location. To drill at this location will involve grading the bar ditch and destroying vegetation. An arch clearance may be required prior to any grading activities.



Figure M 8: Photograph of the HA-4 (Trench 4) area viewing west-southwest toward a caliche road along BLM surface. The area is undergoing natural revegetation and does not need to be restored.



Figure M 9: Excavated material, in the area of Trench 5, from the March 2018 sampling event to be removed during restoration activities.

COOP 6 State Com Battery (1H) [1RP-4821]

Exhibit M6 shows the location relative to the release extent and nearby infrastructure. As shown in Exhibit M6, three locations are identified for vertical delineation. All three locations are not suitable for drilling. Borehole SP-16 is located near a buried pipeline (Figure M10). Moving the location to the north will place the borehole out of the release area. Location 21 & 26 lies within an area that has vegetation growth. Accessing these two areas with a drill rig will cause unnecessary damage to the vegetation (Figures M11 and M12). Location 21 exhibits evidence of the release as indicated by hydrocarbon staining (Figure M13). We recommend restoring the upper soil layer in this area.



Figure M 10: Photo of proposed location of borehole SP-16. The location is within a pipeline easement. The COOP6 State 1H tank battery is visible photo left.



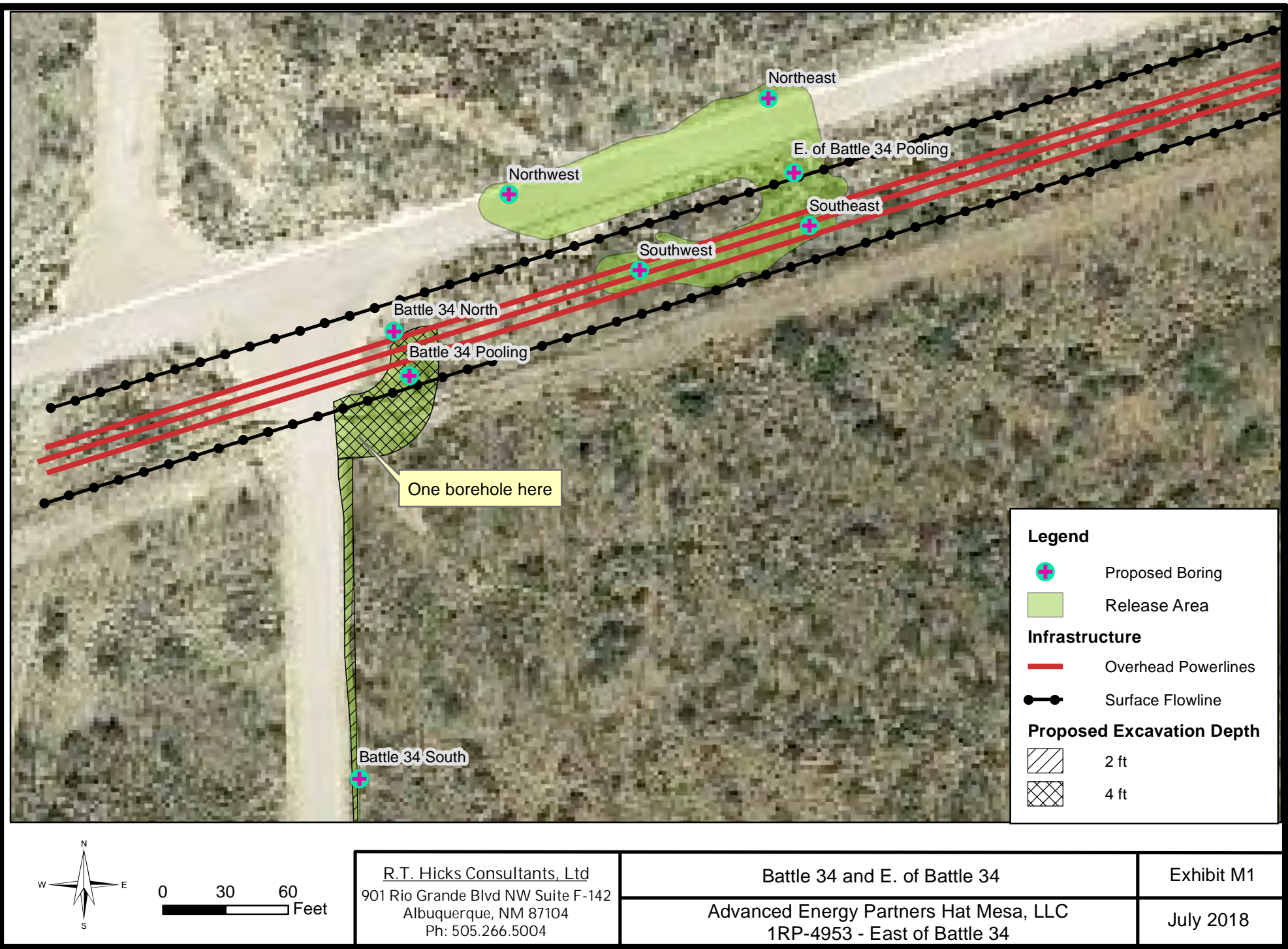
Figure M 11: Photograph of SP-26 viewing east toward the COOP 6 State 1H location. The release is within a small undefined drainage. The surround area supports vegetation.

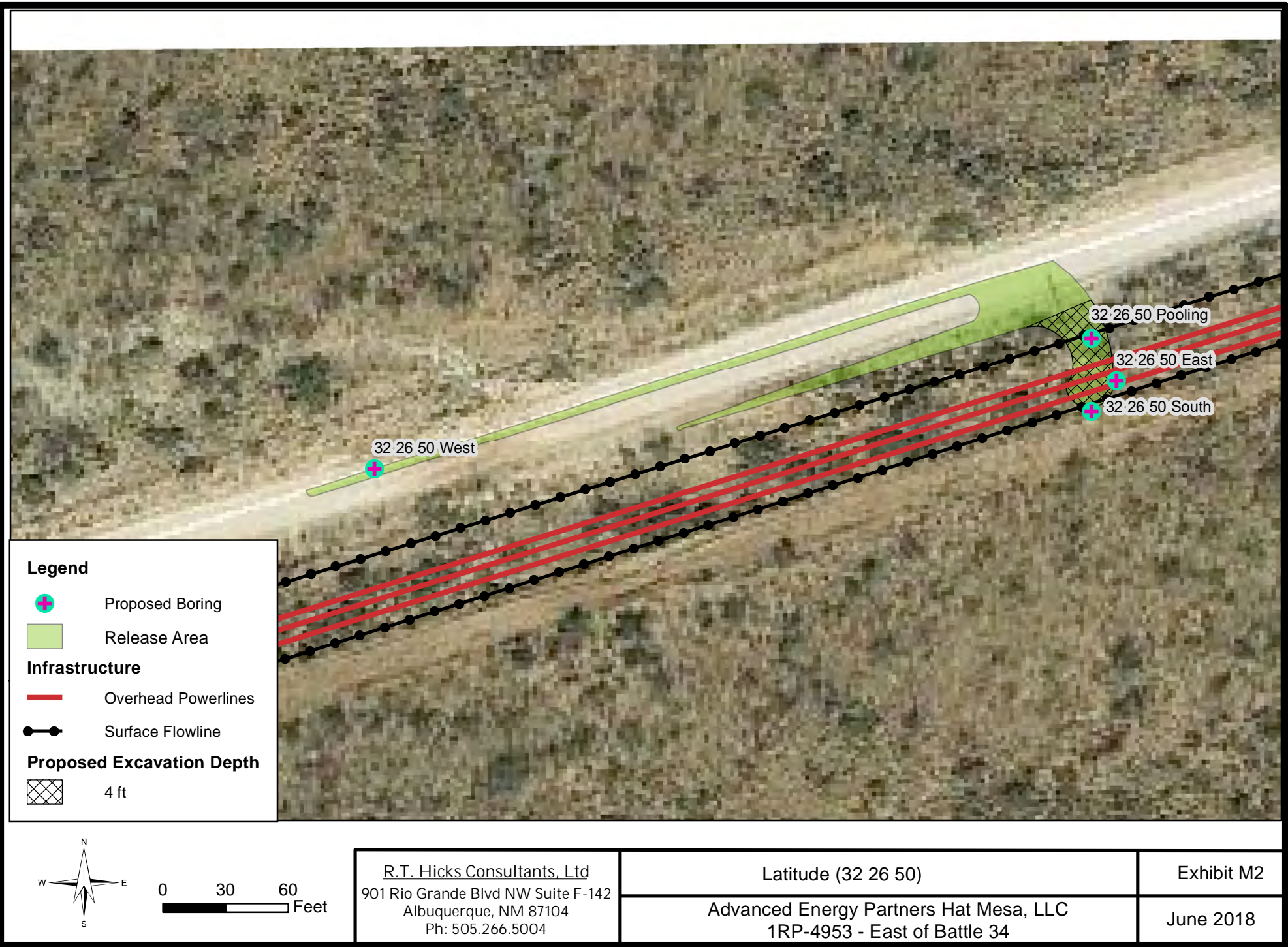


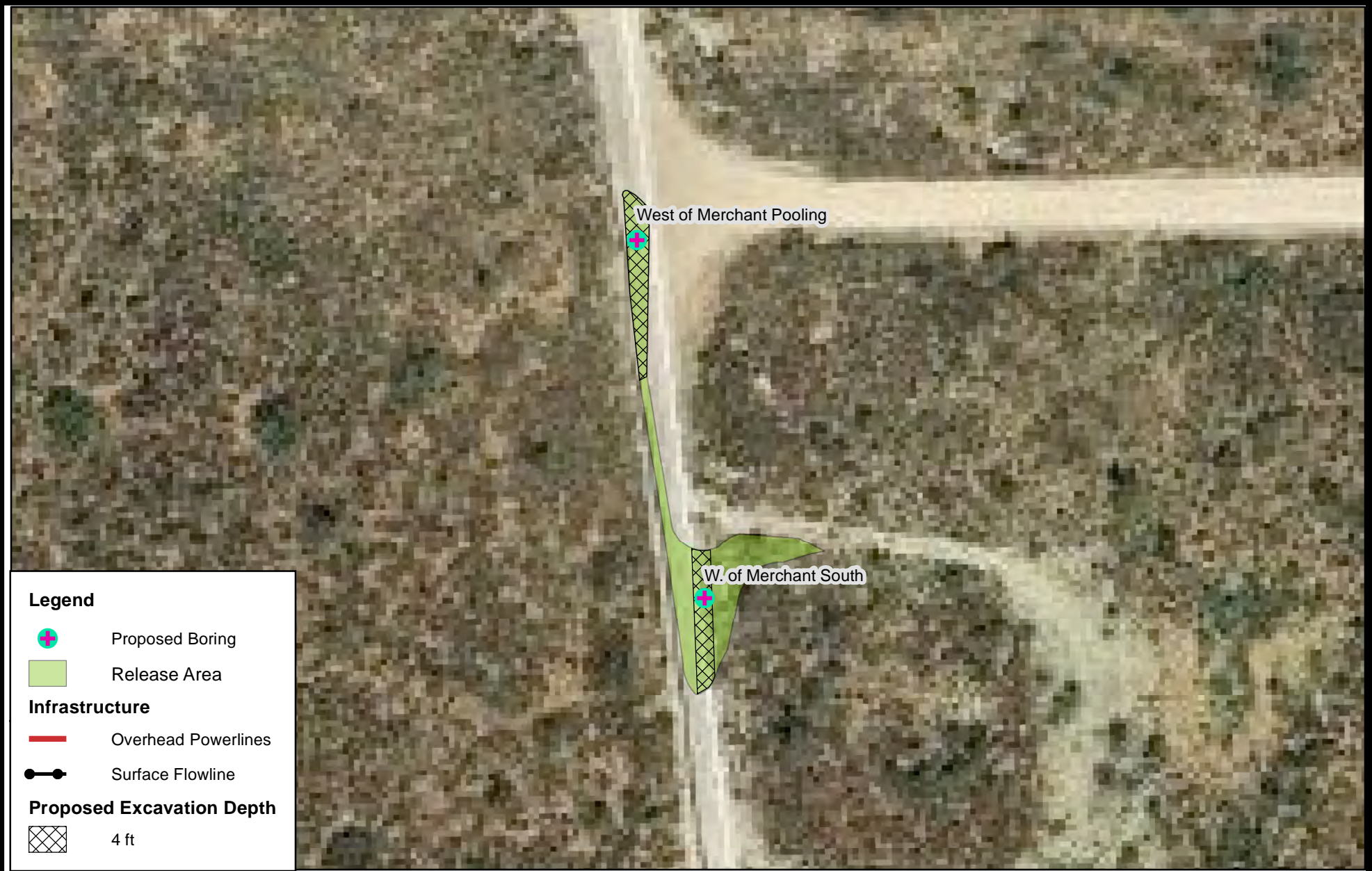
Figure M 12: Photograph of SP-26 viewing west. The release is within a small undefined drainage. The surround area supports vegetation.



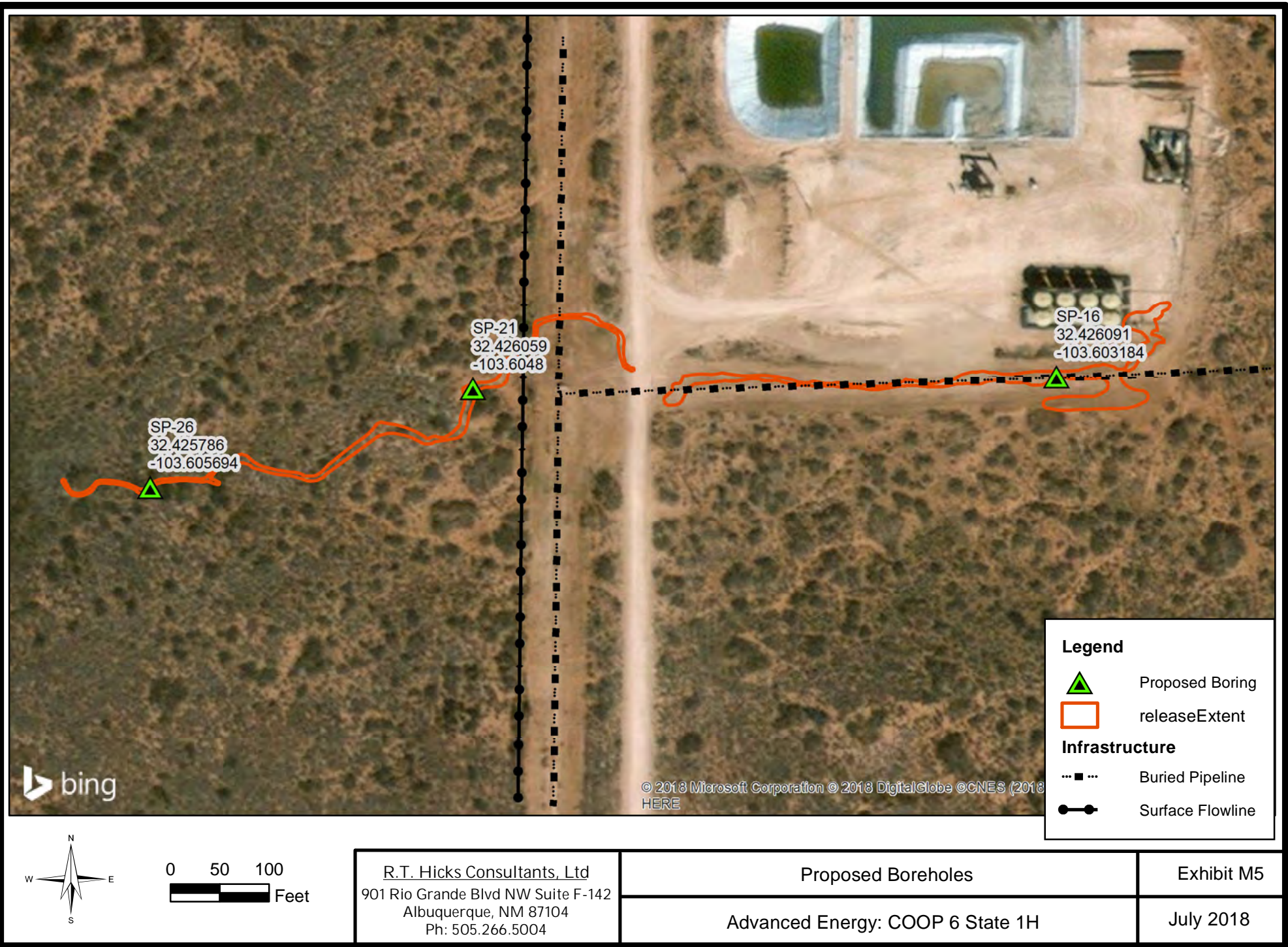
Figure M 13: Photograph of the hydrocarbon surface staining at SP-21.







R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	West of Merchant	Exhibit M3
	Advanced Energy Partners Hat Mesa, LLC 1RP-4953 - East of Battle 34	July 2018



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Proposed Boreholes	Exhibit M5
	Advanced Energy: COOP 6 State 1H	July 2018