NOY1822242858

UIC CLASS V PILOT

2022

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Monday, April 4, 2022 4:35 PM
To: Goetze, Phillip, EMNRD; Hensley, Chad, EMNRD
Cc: Bratcher, Mike, EMNRD
Subject: RE: [EXTERNAL] WTX to EMSU Remediation Plan Addendum, C-108, and Associated Federal Forms (NOY1822242858)

Chad, et al.,

The UIC Class V Remediation Well Pilot Plan is acceptable to the Oil Conservation Division (OCD).

OCD Engineering Bureau, UIC Group will track and report on MW-1 in the EPA 7520 Reporting from now on until the well is plugged and abandoned.

I will send you the document to insert into the Incident File "NOY1822242858" soon.

Please contact me if you have questions.

Thank you.

Carl J. Chavez ● UIC Group
Engineering Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue, N.E. Suite 100 | Albuquerque, NM 87113
505.660.7923
www.emnrd.nm.gov

From: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>
Sent: Monday, April 4, 2022 8:35 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: RE: [EXTERNAL] WTX to EMSU Remediation Plan Addendum, C-108, and Associated Federal Forms (NOY1822242858)

So this is part of the remediation project that Chad and Bradford requested be done as a pilot project. Very good and thank you Carl. Carl, would you take a look and assess as to the information requirements for the Class V. I'll will observe from a distance. Thanks. PRG

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Sent: Monday, April 4, 2022 8:09 AM
To: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>

Cc: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: RE: [EXTERNAL] WTX to EMSU Remediation Plan Addendum, C-108, and Associated Federal Forms (NOY1822242858)

Phil, et al.,

Good morning!

Class V Remediation Wells do not get an API# and are currently not tracked under the E-Permitting System, and there is no well type for Class V Wells in E-Permitting.

Please let me review what was sent before we act on this.

Thank you.

Carl J. Chavez ● UIC Group
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From: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>
Sent: Monday, April 4, 2022 8:06 AM
To: Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Cc: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: RE: [EXTERNAL] WTX to EMSU Remediation Plan Addendum, C-108, and Associated Federal Forms (NOY1822242858)

Chad, help me and confirm what this attachment is suppose to be. This is a site characterization/remediation plan and a C-108 application? If so, the UIC Group will address the C-108 submittal (which should have been submitted through the fee portal as a separate application action). But we'll need to confirm if the consultant has already done this and respond to TRC. Thanks. PRG

From: Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Sent: Monday, April 4, 2022 7:39 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: FW: [EXTERNAL] WTX to EMSU Remediation Plan Addendum, C-108, and Associated Federal Forms (NOY1822242858)

FYI
C-108 included.

Carl do you need anything else or will this work?
Chad

From: Stoffel, Jared <JStoffel@trccompanies.com>
Sent: Friday, April 1, 2022 2:59 PM
To: Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Cc: Gilbert, Bryan <BGilbert@trccompanies.com>; Sahba, Arsin M. <arsin.sahba@hollyfrontier.com>; Melanie Nolan <melanie.nolan@hollyenergy.com>; Trevor.baird <Trevor.baird@hollyenergy.com>; mark.shemaria <mark.shemaria@hollyenergy.com>; Clark, Darija <dclark@trccompanies.com>; Helbert, Dana <DHelbert@trccompanies.com>; Hoover, Shannon <SHoover@trccompanies.com>; Varnell, Richard <RVarnell@trccompanies.com>
Subject: [EXTERNAL] WTX to EMSU Remediation Plan Addendum, C-108, and Associated Federal Forms (NOY1822242858)

Mr. Hensley and Mr. Bratcher,

Please see the attached addendum to the NMOCD-approved November 12, 2021, *Site Characterization Report and Remediation Workplan* for the WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release Site (NOY1822242858). Included in the appendices are the requested C-108 form and associated federal underground injection form. Please let us know if you require any additional information. Otherwise we will stand by for NMOCD's approval of the Remediation Workplan Addendum and the authorization to inject.

Thank you.

Jared Stoffel, P.G.
Project Manager

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Suite 250
Austin, TX 78752

T 512.329.6080
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April 1, 2022

Mr. Chad Hensley
Environmental Science & Specialist
New Mexico Energy, Minerals and Natural Resources Department – Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Remediation Workplan Addendum
WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release
NMOCD Incident No. NOY1822242858
Unit P, Section 11, Township 20S, Range 36E
Latitude 32.583874, Longitude -103.317460
Lea County, New Mexico

Dear Mr. Hensley:

On behalf of Holly Energy Partners – Operating, L.P. (HEP), TRC Environmental Corporation (TRC) is providing this Remediation Workplan Addendum (Addendum) for HEP's WTX to EMSU Battery to Byrd Pump Crude Oil Release Site (Site). The *Site Characterization Report and Remediation Workplan* (SCR and RWP) for the Site was submitted to the New Mexico Oil Conservation Division (NMOCD) on November 12, 2021 (TRC, 2021), and proposed the following remedial actions to address soil with total petroleum hydrocarbon (TPH) concentrations above NMOCD Closure Criteria:

- Excavation and off-Site disposal of surface soil (upper 4 feet) with TPH concentrations above the Closure Criterion;
- Bioventing of soil beneath 4 feet below ground surface (bgs) with TPH concentrations above the Closure Criterion contingent upon the results of a bioventing pilot test; and
- Annual groundwater monitoring during implementation of the soil remedies (i.e., excavation and bioventing, if selected).

The NMOCD provided approval of the November 2021 SCR and RWP in a December 9, 2021, e-mail (NMOCD, 2021). The NMOCD's December 2021 approval e-mail included a request that an additional soil boring be drilled at existing boring location SB-19 and soil samples collected for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX). The location for soil boring SB-19 is depicted on Figure 1. A copy of the December 2021 NMOCD e-mail is included in Appendix A.

Chad Hensley with NMOCD submitted an email on January 18, 2022, indicating NMOCD Form C-108 Application for Authorization to Inject with the appropriate federal forms (Class V) would be required for the pilot test but a public notice would not be required, and requesting additional information on the bioventing injection process, a system diagram of bioventing injection, and latitude and longitude information for the pilot test injection and observation wells (NMOCD, 2022). A copy of the January 2022 NMOCD e-mail is included in Appendix A.

A meeting was conducted between HEP, NMOCD, and TRC on January 25, 2022, to discuss the November 2021 SCR and RWP, NMOCD's December 2021 approval with comments, and NMOCD's January 18, 2022, e-mail. Based on the January 2022 meeting and as summarized in TRC's January 28, 2022, e-mail to NMOCD (TRC, 2022), this Addendum includes the following changes to the remediation workplan presented in November 2021 SCR and RWP:

- An increase in the proposed pilot test duration from two days to seven days.
- Specification of additional soil gas parameters that will be monitored in the surrounding observation wells during the pilot test.
- Addition of clarifying language that the target treatment area of the final bioventing system, if installed, will include the full extent of TPH-affected soil beneath 4 feet bgs at the Site (defined by the yellow dashed line on Figure 1).
- In the event that the pilot test results using the existing well network indicates the bioventing injection effective radius of influence (ROI) does not extend to the perimeter observation wells, an additional observation well will be installed closer to MW-1 (i.e., between wells MW-1 and MW-2) and a second pilot test will be performed to better define the bioventing injection effective ROI.
- Increase in the groundwater monitoring frequency from annual to quarterly during implementation of the remediation workplan.
- Inclusion of the NMOCD Form C-108 Application for Authorization to Inject and United States Environmental Protection Agency (EPA) Underground Discharge System (Class V) Inventory Sheet, which are attached as Appendix B and Appendix C, respectively.

This Addendum addresses the above revisions to the November 2021 SCR and RWP; drilling of an additional soil boring at existing boring location SB-19 for collection of soil samples for analysis of BTEX; and an updated schedule of activities incorporating the landowner's scheduling limitations. Additional details regarding the Addendum are provided below. The proposed excavation and off-Site disposal of surface soil (upper 4 feet) with TPH concentrations above the Closure Criterion will be conducted in accordance with Section 5.1 of the November 2021 SCR and RWP.

REMEDIATION WORKPLAN ADDENDUM

Surface Soil Excavation and Off-Site Disposal

Excavation and off-Site disposal of surface soil with TPH concentrations above Closure Criterion will be conducted to an approximate depth of 4.5 feet bgs in accordance with Section 5.1 of the November 2021 SCR and RWP. The extent of surface soil with TPH concentrations above the Closure Criterion is depicted on Figure 1.

Bioventing

HEP proposes evaluating the use of bioventing to remediate hydrocarbon-affected soil beneath 4 feet bgs at the Site contingent upon the results of a bioventing pilot test. Bioventing systems are proven to facilitate bioremediation of soil affected by large-chain, non-volatile hydrocarbons such as the TPH diesel range organics (DRO) and motor oil range organics (MRO), which represent the majority of the TPH present in soil at the Site. Bioventing facilitates bioremediation by aerating soils with ambient air, which has a high oxygen content. The increased oxygen levels promote populations of aerobic bacteria to aerobically degrade hydrocarbons present in soil.

Bioventing is appropriate for the Site based on the following:

- According to *Procedures for Conducting Bioventing Pilot Tests and Long-Term Monitoring of Bioventing Systems* (Air Force Center for Environmental Excellence [AFCEE], 2004), "Bioventing is best suited for petroleum hydrocarbons with greater than 8 carbon atoms (C8+) such as jet fuels, diesels and heating oils." The vast majority of the TPH present at the Site is in the C8+ range, including DRO and MRO. Volatile hydrocarbons, such as C6-C8 compounds (including BTEX), are a negligible component of the hydrocarbons present in the soil at the Site.

- The TPH-affected soils at the Site, including interbedded sandy clays, fine/clayey sands, and sandy caliche with cobbles, are well suited to aeration via bioventing.
- Soil gas conditions were evaluated at an approximate depth of 35 feet bgs (just above the saturated zone) in all five Site monitoring wells during October 2021. During aerobic respiration, oxygen is utilized by aerobic microorganisms and carbon dioxide is generated as a byproduct. The soil gas evaluation suggests aerobic degradation is occurring predominantly in the vicinity of release area well MW-1 and, to a lesser extent, in the vicinity of wells MW-2, MW-3, and MW-4. Aerobic respiration is likely being limited by low levels of oxygen available in the subsurface.

According to available literature, it takes approximately 3.5 pounds of oxygen to reduce 1 pound of hydrocarbons. Based on soil gas measurements at well MW-1, and as discussed above, aerobic respiration in the release area is likely being limited by the low oxygen levels present in the subsurface. Bioventing would increase oxygen concentrations and increase bioremediation rates.

The objective of bioventing, if implemented at the Site, would be to reduce TPH concentrations in soil beneath 4 feet bgs. HEP proposes that a bioventing pilot test be performed at the Site to evaluate the effectiveness of the technology and determine the optimum operational parameters to maximize treatment of hydrocarbon-affected soil.

Pilot Test

The NMOCD Form C-108 Application for Authorization to Inject and EPA Underground Discharge System (Class V) Inventory Sheet for the bioventing pilot test are attached in Appendices B and C, respectively.

A bioventing pilot test will be performed utilizing the existing monitor well network and will consist of the following:

- Utilize a generator-powered blower to inject ambient air into release area well MW-1. The wellhead will be connected to the blower using 2-inch above-ground flexible hose and the wellhead will be sealed during injection activities using a 2-inch diameter compression fitting. A process flow diagram for the bioventing pilot test injection is shown on Figure 2. The air injection rate will range from 1 to 3 cubic feet per minute (cfm) per vertical foot of the MW-1 screen interval in the vadose zone (approximately 6 feet), or approximately 6 to 18 cfm.
- Air will be injected into MW-1 for seven days. Ambient air injection will periodically rest, or temporarily pause, at MW-1 for up to 12 hours. Allowing rest time during ambient air injection has been shown to increase the effectiveness of bioventing applications as it helps to eliminate stagnation zones, promotes varying soil gas pressure and chemistry changes that increase bioavailability of oxygen to soil bacteria, and allows the hydrocarbon mass to re-enter permeable pathways. The appropriate period of active injection and rest time will be determined during the pilot test by monitoring the concentrations of oxygen and carbon dioxide in soil gas at observation wells and volatile organic compounds (VOCs) in soil gas at the injection well during the pilot test.
- During injection at MW-1, soil gas oxygen concentrations will be periodically monitored using a four-gas meter at observation wells MW-2, MW-3, MW-4, and MW-5. Soil gas VOCs, methane, carbon dioxide, hydrogen sulfide, and LEL levels will also be measured as supporting data. Additionally, wellhead pressure/vacuum will be periodically monitored at the observation wells. The pilot test is anticipated to have an effective injection ROI of approximately 50 feet based on the soils present beneath the Site.
- Following injection at MW-1, soil gas VOCs, oxygen, methane, carbon dioxide, hydrogen sulfide, and LEL levels in MW-1 will be monitored over an 8 to 12-hour period to assess oxygen consumption rates over time.

The locations of the proposed pilot test injection well (MW-1), the anticipated effective injection ROI of 50 feet, and the pilot test observation wells (MW-2, MW-3, MW-4, and MW-5) are shown on Figure 1. The latitude and longitude for the proposed pilot test injection and observation wells are summarized in the table below. The well construction log for pilot test injection well MW-1 and observation wells MW-2 through MW-5 are included in Appendix D.

Latitude and Longitude for Injection and Observation Wells

Well ID	Pilot Test Well Type	Latitude	Longitude
		North American Datum of 1983	
MW-1	Injection Well	32.583908	-103.317464
MW-2	Observation Wells	32.584046	-103.317430
MW-3		32.583788	-103.317594
MW-4		32.583756	-103.317355
MW-5		32.584131	-103.317565

Soil gas oxygen, carbon dioxide, hydrogen sulfide, and LEL levels will be measured using a four-gas meter calibrated with an appropriate four-gas mixture. Methane will be measured using a landfill gas meter calibrated with an appropriate gas mixture of methane and carbon dioxide. VOCs will be measured using a photo-ionization detector (PID) calibrated with isobutylene gas. Wellhead vacuum/pressure will be measured using a Magnehelic differential pressure gauge. During the soil gas monitoring process, each observation well will be purged of three casing volumes of soil gas prior to monitoring. A soil gas purge pump will be used to remove ambient soil gas from the well casing. Soil gas will be monitored prior to the pilot test to establish a baseline and daily during the pilot test. Pressure/vacuum will be monitored hourly during the pilot test until stabilization, which is anticipated to occur on the first day, and monitored daily thereafter.

If the bioventing effective ROI does not extend to the existing observation wells during the pilot test based on the soil gas readings and wellhead pressure/vacuum, an additional observation well will be installed between wells MW-1 and MW-2 and the bioventing pilot test will be repeated. If installed, the additional well will be installed in the manner consistent with existing observation wells at the Site.

Following injection, the reduction in oxygen concentrations over time at depth in well MW-1 will be used to estimate aerobic degradation rates. The effectiveness of bioventing will be based on primary and secondary criteria. Primary criteria include the rate of oxygen consumption (as measured after injection ceases) and the effective ROI (as measured while injection is occurring). Secondary criteria include changes in soil gas VOCs, methane, carbon dioxide, hydrogen sulfide, and LEL levels as measured during both the injection phase of the pilot test and after injection ceases.

The findings of the bioventing pilot test will be presented in a letter report to NMOCD. If bioventing is determined to be effective based on the results of the pilot test, the letter report will also include the full-scale bioventing system design, operational schedule and timeframe, procedures for system operation and maintenance (O&M), and remediation endpoints/confirmation sampling. The pilot test data will be used to determine the optimal design and operational parameters. If the pilot test results indicate bioventing is not effective, the letter report will document the findings of the pilot test and an alternative for remediating TPH-affected soil beneath 4 feet bgs.

Potential Full-Scale Bioventing System

As discussed above, if bioventing is determined to be effective based on the results of the pilot test, a full-scale bioventing system will be designed and proposed to NMOCD prior to being installed at the Site. The pilot test data and effective injection ROI will be used to determine the optimal design and operational parameters, including the number and location of bioventing injection wells to ensure treatment of the full extent of TPH-affected soil beneath 4 feet bgs at the Site as shown by the yellow dashed line on Figure 1. In other words, the bioventing injection wells will be located such that the effective ROI overlaps the entire area shown by the yellow dashed line on Figure 1.

Bioventing injection wells will be installed using 2-inch diameter schedule 40 polyvinyl chloride (PVC) casing and 0.020-inch slotted screen. The anticipated injection well depth will be approximately 40 feet bgs, with the bottom of the injection well screen set two to four feet below the top of groundwater to ensure oxygenation throughout the vadose zone during seasonal fluctuation of groundwater levels. The top of the screen interval for each injection well will be based on the depth interval of TPH-affected soil at each well location as indicated by existing soil sample analytical results or observations of hydrocarbon-affected soil during injection well installation. The sand filter pack in each injection well will be sealed by a minimum of four feet of hydrated bentonite chips to ensure an air-tight seal above the screened interval.

The blower size for the full-scale system will be based on the flow rate and number of injection wells required to treat the full extent of TPH-affected soil beneath 4 feet bgs at the Site. The blower will be powered with a gasoline-powered generator. The skid-mounted blower will be connected to the bioventing injection wells using flexible aboveground hose. Injection will be rotated between multiple injection wells, as appropriate, based on measured soil gas oxygen and carbon dioxide levels in observation wells and VOC levels at injection wells. Optimal injection and rest time will be utilized as determined during the pilot test.

Groundwater Monitoring and Reporting

While groundwater assessment results indicate groundwater beneath the Site has **not** been affected by the 2018 HEP release, quarterly groundwater monitoring is proposed at the Site as a conservative measure to monitor groundwater quality during implementation of the soil remedies (i.e., excavation and bioventing, if selected). Existing monitoring wells MW-1 through MW-5 will be gauged for depth to light non-aqueous phase liquid (LNAPL), if present, and groundwater, and sampled using low flow methodology for laboratory analysis of TPH by EPA Method 8015M. The monitoring results will be documented in annual groundwater monitoring reports to be prepared and submitted to NMOCD within 120 days of the end of each calendar year during which groundwater sampling occurs. The monitoring results may be presented with the bioventing system O&M data, if implemented at the Site. The schedule for quarterly groundwater monitoring activities is described below. Groundwater monitoring will cease upon completion of the soil remedies.

Additional Soil Boring at SB-19 for BTEX Analysis

As requested by NMOCD, a soil boring will be drilled immediately adjacent to existing soil boring location SB-19 for collection of soil samples for laboratory analysis of BTEX. The soil boring will be drilled to a depth of 35 feet bgs using a hollow-stem auger drill rig. Soil cores will be continuously collected from the boring using a split spoon sampler. Lithology, field observations of the potential presence of petroleum hydrocarbons, including hydrocarbon odor and staining, and PID readings will be recorded at minimum of 2-foot intervals. The proposed location for soil boring SB-19 is depicted on Figure 1.

Soil samples will be collected for BTEX analysis from the same intervals previously sampled for TPH analysis in May 2019 at soil boring SB-19, including the following: 2 to 3 feet bgs; 4 to 5 feet bgs; 11 to 12 feet bgs; 19 to 20 feet bgs; 24 to 25 feet bgs; 29 to 30 feet bgs; and 34 to 35 feet bgs. The soil samples

will be analyzed for BTEX by EPA Method SW8260. Following sampling, the soil boring will be backfilled with hydrated bentonite.

The soil boring and soil sample analytical results will be documented in a brief letter report to be submitted to NMOCD. The report will include a map depicting the soil boring location, soil boring log, a summary table of the BTEX analytical results relative to the Closure Criteria, and copies of the laboratory analytical report.

IMPLEMENTATION SCHEDULE

The Site is used by L&K Ranch for calving purposes from mid-March to mid-May of each year. Therefore, L&K has requested that no remediation or other Site activities be conducted during this timeframe (i.e., until May 15, 2022). Therefore, HEP proposes the following schedule for implementation of the Remediation Workplan Addendum contingent upon approval from NMOCD:

- Conduct the bioventing pilot test and submit a pilot test letter report within 150 days from May 15, 2022 (i.e., by October 12, 2022) or 150 days from NMOCD-approval of this Remediation Workplan Addendum (and NMOCD Form C-108 Application for Authorization to Inject and EPA Underground Discharge System [Class V] Inventory Sheet), whichever comes later. If the effective bioventing ROI does not extend to the existing observation wells during the pilot test, an extension will be requested to install an additional observation well and repeat the bioventing pilot test.
- Initiate quarterly groundwater monitoring within 90 days of NMOCD-approval of this Remediation Workplan Addendum or 90 days from May 15, 2022 (i.e., by August 13, 2022), whichever comes later.
- Excavation, off-Site disposal, and backfilling of surface soils will be completed within 90 days of completion of the bioventing pilot test.
- Drilling of the additional soil boring at soil boring location SB-19 and submittal of a letter report documenting soil boring BTEX analytical results will be completed within 90 days of completing the bioventing pilot test.

CLOSING

If you should have any questions or comments regarding this project, please contact Trevor Baird of HEP at (214) 954-6712 or Jared Stoffel of TRC at (432) 238-3003.

Sincerely,

Jared Stoffel, P.G.
Project Manager

Bryan Gilbert, P.G.
Austin Office ECW Practice Leader

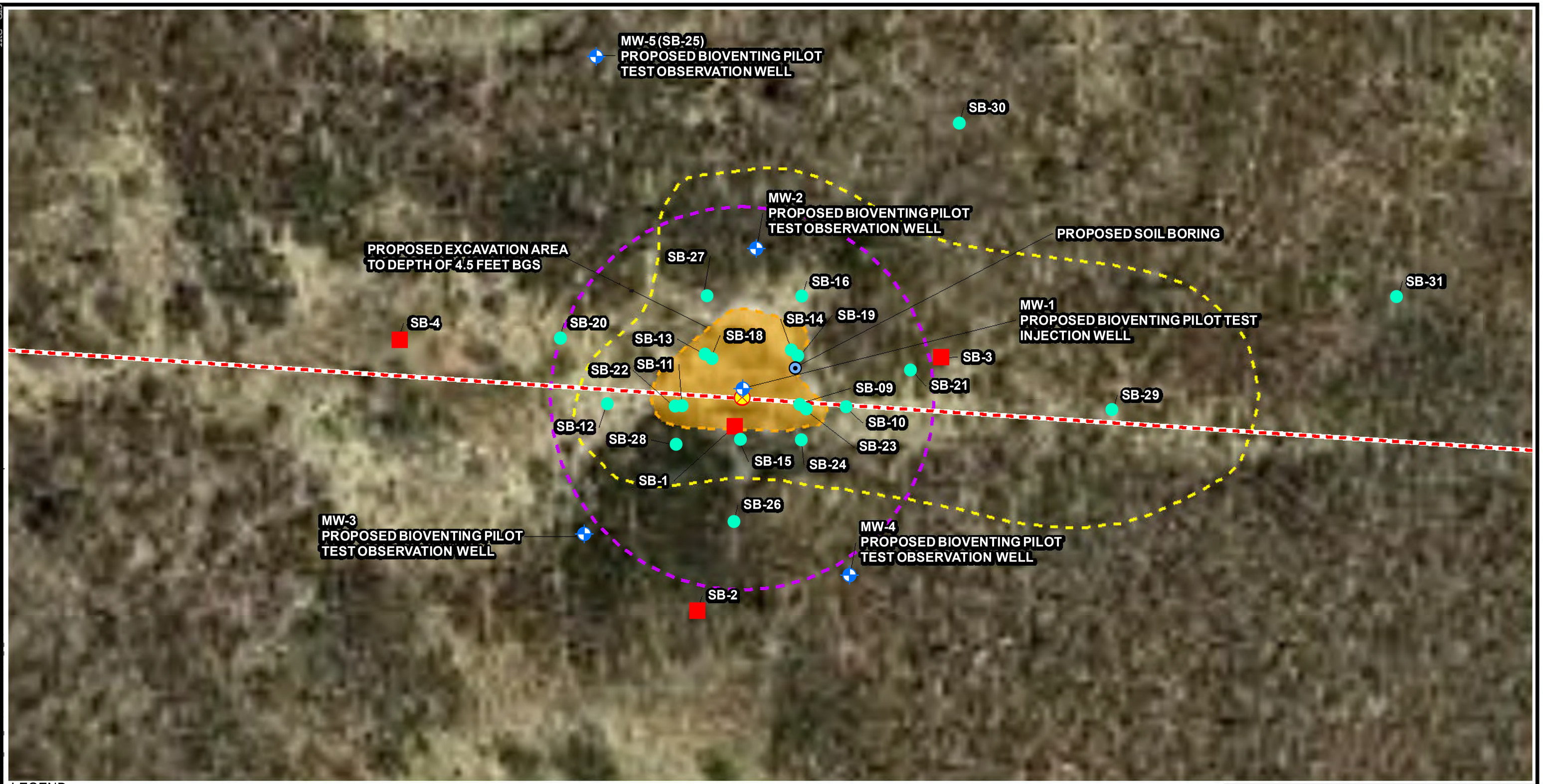
cc: Mike Bratcher, New Mexico Energy, Minerals, and Natural Resources Department, Artesia, New Mexico
Bradford Billings, New Mexico Energy, Minerals, and Natural Resources Department, Albuquerque, New Mexico

L&K Ranch LLC, Hobbs, New Mexico
Mark Shemaria, HEP, Dallas, Texas
Arsin Sahba, P.G., HF Sinclair, Dallas, Texas
Shannon Hoover, P.G., TRC, Austin, Texas

Attachments:
Figure 1 – Proposed Soil Remediation Plan
Figure 2 – Proposed Bioventing Pilot Test Process Flow Diagram

Appendix A – Copies of E-Mail Correspondence
Appendix B – NMOCD Form C-108 Application for Authorization to Inject
Appendix C – EPA Underground Discharge System (Class V) Inventory Sheet
Appendix D – MW-1 through MW-5 Well Construction Logs
Appendix E – References

FIGURES



LEGEND

- GHD SOIL BORING LOCATION
- OBSERVATION WELL/SOIL BORING LOCATION
- TRC SOIL BORING LOCATION
- 6" GATHERING LINE
- RELEASE LOCATION
- PROPOSED SOIL BORING LOCATION
- ANTICIPATED BIOVENTING PILOT TEST RADIUS OF INFLUENCE (50 FEET)
- PROPOSED EXCAVATION AREA TO DEPTH OF 4.5 FEET BGS
- EXTENT OF SURFACE SOIL (0-4 FEET BGS) WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA
- EXTENT OF SOIL BENEATH 4 FEET BGS WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA

SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

NOTES:
1. GHD SOIL SAMPLES (SB-1 THROUGH SB-4) COLLECTED ON 9/28/2018.
2. TRC SOIL SAMPLES (SB-05 THROUGH SB-16) COLLECTED ON 11/3-6/2020.
3. TRC SOIL SAMPLES (SB-18 THROUGH SB-28) COLLECTED ON 5/24-28/2021.
4. SB-17 INADVERTENTLY SKIPPED
5. TRC SOIL SAMPLES FROM SB-29 THROUGH SB-31 COLLECTED ON OCTOBER 5-7, 2021
6. EXCAVATION WAS BACKFILLED IN AUGUST 2018.

0 12.5 25 Feet
1 " = 25 '
1:300

PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

TITLE:
PROPOSED SOIL REMEDIATION PLAN

DRAWN BY:	M. JAGOE	PROJ NO.:	426140
CHECKED BY:	B. GILBERT		
APPROVED BY:	S. HOOVER		FIGURE 1
DATE:	MARCH 2022		

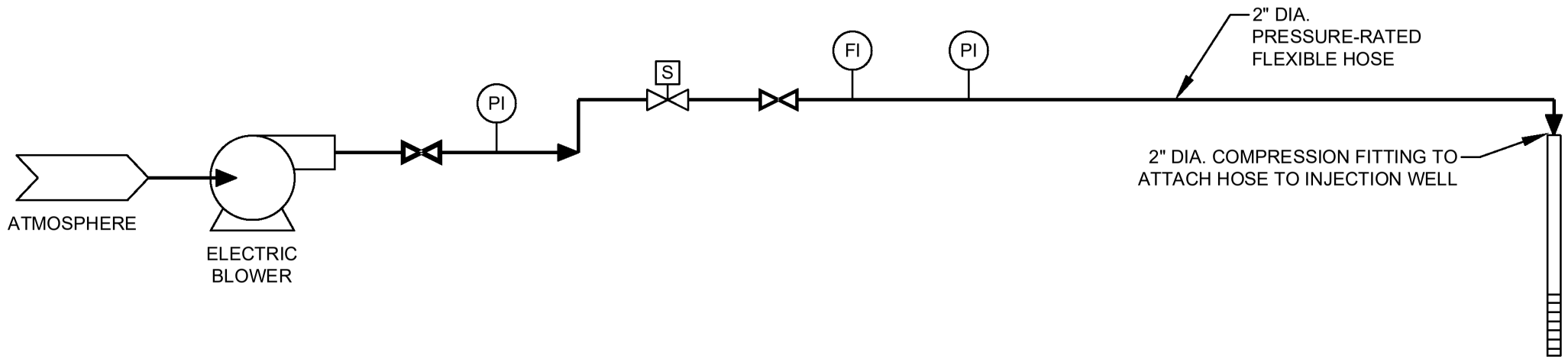
TRC
505 East Huntland Drive, Suite 250
Austin, TX 78752
Phone: 512.329.6080
www.trcsolutions.com

FILE NO.: 466951_1_AOI.mxd

Plot Date: 3/21/2022, 12:08:34 PM by MJAGOE -- LAYOUT: ANSI B (11"x17")
Path: G:\4 PROJECTS\HOLLY_ENERGY_PARTNERS\466951_WTX_EMSU\2 MXD\466951_1_AOI.mxd
Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0
TRC - GIS

LEGEND

- CONTROL VALVE
- PI — PRESSURE INDICATOR
- S — FLOW REGULATOR
- FI — FLOW INDICATOR



PILOT TEST DIAGRAM

MW-1 BIOVENTING INJECTION

PROJECT:
HOLLY ENERGY PARTNERS - OPERATING L.P.
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

TITLE:
PROPOSED BIOVENTING
PILOT TEST PROCESS FLOW DIAGRAM

DRAWN BY:	J. KONIAR	PROJ NO.:	466951
CHECKED BY:	D. HELBERT		FIGURE 2
APPROVED BY:	D. HELBERT		
DATE:	FEBRUARY 2022		

TRC
6736 West Washington St.
Suite 2100
West Allis, WI 53214
Phone: 262.879.1212

FILE NO.: 466951-01.dwg

APPENDIX A

COPIES OF E-MAIL CORRESPONDENCE

From: Nolan, Melanie <Melanie.Nolan@hollyenergy.com>
Sent: Thursday, December 9, 2021 11:53 AM
To: Varnell, Richard; Sahba, Arsin M.; mark.shemaria; Trevor.baird; Hoover, Shannon; Gilbert, Bryan
Subject: [EXTERNAL] EMSU (Klien)The Oil Conservation Division (OCD) has approved the application, Application ID: 61641

All,
We have received approval for the EMSU SCR and Workplan with the below mentioned conditions.

Thank you,

Melanie Nolan
Environmental Specialist/EHS Department

Holly Energy Partners
O 575-748-8972
M 214-605-8303
Melanie.Nolan@hollyenergy.com
www.hollyenergy.com

1602 W. Main, Artesia, New Mexico, 88210

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Thursday, December 9, 2021 10:02 AM
To: Nolan, Melanie <Melanie.Nolan@hollyenergy.com>
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 61641

To whom it may concern (c/o Melanie Nolan for HOLLY ENERGY PARTNERS - OPERATING, LP),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nOY1822242858,
with the following conditions:

- **The OCD would like to see more sample data at SB-19 that includes BTEX sampling at the various depths mentioned.**

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,
Chad Hensley
Environmental Science & Specialist
575-703-1723
Chad.Hensley@state.nm.us

New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

From:	Hensley, Chad, EMNRD
To:	Varnell, Richard; Chavez, Carl J, EMNRD; Bratcher, Mike, EMNRD
Cc:	Goetze, Phillip, EMNRD; Bratcher, Mike, EMNRD; Hoover, Shannon; Stoffel, Jared; Coupland, Lori; Trevor.baird; mark.shemaria; Sahba, Arsin M.; Gilbert, Bryan
Subject:	RE: [EXTERNAL] RE: TRC project for Bioventing bioremediation by aerating soils with ambient air
Date:	Tuesday, January 18, 2022 3:48:24 PM
Attachments:	image002.png

RD,

Good afternoon. Per our phone conversation this afternoon.

The OCD considers the remediation project for bioventing with ambient air as a class V UIC with the following instructions:

- Require the permit C-108 with the appropriate federal forms.
- A public noticed is not required for this permit with the caveat that public health will not be impacted. If that status was to change OCD would require notification immediately.
- Addendum report is requested that explains in further detail on the UIC process, system diagram of the injection wells, and latitude and longitude information for each well.

Thank you for you time,

Chad Hensley ● Environmental Science & Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
811 First St. | Artesia, NM 88210
Office: 575.748.1283 | Cell: 575-703-1723
chad.hensley@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Varnell, Richard <RVarnell@trccompanies.com>
Sent: Tuesday, January 18, 2022 10:32 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Bratcher, Mike, EMNRD

<mike.bratcher@state.nm.us>; Hoover, Shannon <SHoover@trccompanies.com>; Stoffel, Jared <JStoffel@trccompanies.com>; Coupland, Lori <Lori.Coupland@hollyenergy.com>; Trevor.baird <Trevor.baird@hollyenergy.com>; mark.shemaria <mark.shemaria@hollyenergy.com>; Sahba, Arsin M. <arsin.sahba@hollyfrontier.com>; Gilbert, Bryan <BGilbert@trccompanies.com>
Subject: RE: [EXTERNAL] RE: TRC project for Bioventing bioremediation by aerating soils with ambient air

Hi all,

I wanted to thank you for checking on this, and to loop in the Holly Energy Partners – Operating, LP (HEP) team on this discussion regarding a UIC permit for the injection of ambient air into the vadose zone at the WTX to EMSU site. The injection will be performed as part of a pilot test for bioventing, which facilitates bioremediation of hydrocarbon-affected soil by increasing oxygen concentrations in the subsurface.

Our discussions on January 5 and January 12, 2022, are summarized as follows:

- RD Varnell (on behalf of HEP) asked Chad Hensley for guidance regarding what will be required to apply for a UIC permit for the bioventing pilot test.
- Chad included Carl Chavez, with the NMOCD UIC group, in on the discussion.
- Based on informal discussions between Chad, Carl, and RD, it appears that an UIC permit application using NMOCD's C-108 form (*Application for Authorization to Inject*) and supporting federal application forms is reasonable for this type of injection (ambient air into the vadose zone).
- Chad and/or Carl are in the process of confirming this application format with NMOCD management.
- Chad and/or Carl will inform HEP and TRC once a decision has been made regarding the UIC Permit application requirements.

Please let me know if you do not concur with the summary above or if I missed anything. And thank you for your help with this!

Sincerely,

-RD Varnell

Richard (RD) Varnell, P.G., P.E.
Senior Project Manager

505 E. Huntland Drive, Suite 250, Austin, TX 78752
T 512.626.3990 | **F** 512.684.3136 | **C** 512.297.3019
LinkedIn | Twitter | Blog | TRCcompanies.com

Please note that my office number has changed.

From: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Sent: Wednesday, January 5, 2022 2:51 PM
To: Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Varnell, Richard <RVarnell@trccompanies.com>
Subject: [EXTERNAL] RE: TRC project for Bioventing bioremediation by aerating soils with ambient air

Chad,

Thanks for the follow-up.

As you had indicated, the injection wells are injecting ambient air as part of an oil and gas release incident.

I showed you the "UIC Class V Well" thumbnails in GW-28 (WQCC), GW-40 (WQCC) and GW-294 (oil & gas).

I'm not sure on the depth of the injection wells proposed for ambient air injection, but if the wells are longer than wide and at a significant depth, OCD may want to require certain forms to be completed to assess and track them to plug and abandonment.

The question is whether OCD follows the GW-294 approach, WQCC approach with formal public notice or WQCC approach with GW remediation permit and similar thumbnail info. as referenced above?

Thank you.

Carl J. Chavez ● UIC Group
Engineering Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue, N.E. Suite 100 | Albuquerque, NM 87113
505.660.7923
www.emnrd.nm.gov

From: Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Sent: Wednesday, January 5, 2022 1:37 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>

Cc: Goetze, Phillip, EMNRD <Phillip.Goetze@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; rvarnell@trccompanies.com
Subject: TRC project for Bioventing bioremediation by aerating soils with ambient air

Good afternoon, Gentleman.

I have included Richard Varnell (cell 512-626-3990) in the e-mail so if we have any questions, we can reach out to him directly.

Carl and I briefly spoke this morning to discuss the Holly Energy Partners release and proposed remediation activities. We want to ensure we have TRC (third Party contractor for Holly) submit the proper UIC permit paperwork. Below are some of the more principal information regarding this.

DTW = 38ft bgs.
Bioventing of soil beneath 4 feet bgs with TPH concentrations above the Closure Criterion contingent upon the results of a bioventing pilot test; Oxygen is utilized by aerobic microorganisms and carbon dioxide is generated as a byproduct.
5 Monitoring wells will be installed.

The pilot test would consist of the following:

- Submit an underground injection control (UIC) permit application to NMOCD to inject air into the soil column at the Site. NMOCD will either approve the UIC permit or determine that a UIC permit is not required.
- Utilize a generator-powered blower to inject ambient air into release area well MW-1. The wellhead will be sealed during injection activities. The air injection rate will range from 1 to 3 cubic feet per minute per vertical foot of the screened interval in the vadose zone. Air will be injected into MW-1 for approximately two days or until atmospheric oxygen concentrations (i.e., approximately 20.9 percent) are measured in soil gas at depth in MW-1.
- During injection at MW-1, soil gas oxygen concentrations will be periodically monitored using a four-gas meter at wells MW-2, MW-3, MW-4, and MW-5 at an approximate depth of 34 to 35 feet bgs. Soil gas carbon dioxide, hydrogen sulfide, and LEL levels will also be measured as supporting data. Additionally, wellhead pressure/vacuum will be periodically monitored at these wells. The pilot test is anticipated to have a radius of influence of approximately 50 feet based on the soils present beneath the Site.
- Following injection at MW-1, soil gas oxygen concentrations in MW-1 will be monitored at an approximate depth of 34 to 35 feet bgs over an 8 to 12-hour period to assess oxygen consumption rates over time. As above, soil gas carbon dioxide, hydrogen sulfide, and LEL levels will also be measured.

For more information on the project; Application Number: 61641

If you have any questions don't hesitate to reach out and I'll help out as much as I can.

Chad Hensley ● Environmental Science & Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
811 First St. | Artesia, NM 88210
Office: 575.748.1283 | Cell: 575-703-1723
chad.hensley@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Stoffel, Jared
Sent: Friday, January 28, 2022 12:12 PM
To: mike.bratcher@state.nm.us; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>; Sahba, Arsin M. <arsin.sahba@hollyfrontier.com>; melanie.nolan <melanie.nolan@hollyenergy.com>; trevor.baird@hollyfrontier.com; mark.shemaria <mark.shemaria@hollyenergy.com>
Cc: Hoover, Shannon <SHoover@trccompanies.com>; Gilbert, Bryan <BGilbert@trccompanies.com>; Varnell, Richard <RVarnell@trccompanies.com>; Pearson, Christopher <CPearson@trccompanies.com>; Clark, Darija <dclark@trccompanies.com>
Subject: Email memorializing 1/25/2022 NMOCD-HEP Discussing the WTX to EMSU Remediation Plan (NOY1822242858)

Hi, All,

We wanted to thank you for your time meeting with us and memorialize our meeting on Tuesday, January 25, 2022. The meeting was held at the request of the New Mexico Oil Conservation Division (NMOCD) to discuss the WTX to EMSU Remediation Plan (NMOCD Incident #NOY1822242858). Meeting participants included NMOCD staff (Mike Bratcher, Bradford Billings, and Chad Hensley), representatives from Holly Energy Partners – Operating, L.P. (HEP), and TRC Environmental Corporation (TRC). Based on the meeting, NMOCD has requested:

1. HEP submit an Addendum to the November 2021 Remediation Workplan to include the following:
    a. An increase in the proposed pilot test from two days to a period of at least one week.
    b. Specification of any additional parameters that will be monitored in the surrounding monitoring wells during the pilot test. The November 2021 Remediation Workplan proposed monitoring soil gas oxygen, carbon dioxide, hydrogen sulfide, and LEL levels/concentrations, as well as wellhead pressure/vacuum.
    c. Add clarifying language that the target treatment area of the final bioventing system will include the extent of affected soil defined by the yellow dashed line in Figure 11 of the November 2021 Remediation Workplan (in the event that the pilot test data suggests that bioventing will be an acceptable final remedy).
    d. In the event that the initial pilot test using the existing well network indicates the radius of influence does not extend to the perimeter monitoring wells, an additional monitoring well will be installed closer to MW-1 to better define the radius of influence and a second pilot test will be performed.
    e. Increase the downgradient groundwater monitoring frequency during implementation of the Remediation Workplan.

2. Based on prior communication with NMOCD, a UIC permit application consisting of the NMOCD's C-108 form and associated federal forms will be attached to the Remediation Workplan Addendum. A public notice will not be required.
3. The Remediation Workplan Addendum will be in a letter format and will be submitted via electronic mail.

Please let us know if we have missed anything, or if you have a different interpretation of the above from the call.

We appreciate the opportunity to discuss the site and remediation workplan with you!

Jared Stoffel, P.G.
Project Manager

505 E Huntland Dr STE 250 Austin, TX 78752
F: 512 329 8750 | **C**: 432 238 3003
LinkedIn | Twitter | Blog | TRCcompanies.com

APPENDIX B

NMOCD FORM C-108 APPLICATION FOR AUTHORIZATION TO INJECT

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance _____ Disposal _____ Storage
Other: Environmental Remediation - Ambient Air Injection for Bioventing Pilot Test
Application qualifies for administrative approval? ____**X**____ Yes _____ No

II. OPERATOR: ____**Holly Energy Partners – Operating, L.P.**_____

ADDRESS: _**1602 W. Main, Artesia NM 88210 / Facility Name: WTX to EMSU Battery to Byrd Pump Segment**_

CONTACT PARTY: _____**Melanie Nolan**_____ PHONE: _**(214) 605-8303**____

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____ Yes ____X____ No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review. **Figure 1 is attached. As shown, oil and gas lease information is not provided because the proposed injection zone (less than 40 feet below ground surface [bgs]) is not an oil and gas production zone.**

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail. **Please see supplemental information below.**

VII. Attach data on the proposed operation, including: **Please see supplemental information below for answers to questions in Section VII**

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any. **None**

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). **MW-1 well construction log attached.**

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken. **Laboratory analytical data for groundwater monitoring wells at the Site collected in 2020 and 2021 has been submitted to NMOCD in the November 2021 *Site Characterization Report and Remediation Workplan* and is attached (Table 1). Additional analytical information for wells not owned by HEP is not available. Additionally, wells not owned by HEP do not produce from the proposed injection interval (i.e., the vadose zone or less than 40 feet bgs).**

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water. **NA**

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. **NA**

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Melanie Nolan TITLE: Environmental Specialist

SIGNATURE: Melanie Nolan DATE: 4-1-2022

E-MAIL ADDRESS: Melanie.Nolan@hollyenergy.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Side 2

III. WELL DATA – **Please see supplemental information below for information required in Section III**

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location. **In a January 18, 2022, e-mail, the NMOCD waived the requirement for public notice with the caveat that public health will not be impacted. Public health is not anticipated to be impacted by ambient air injection during the bioventing pilot test. The NMOCD response was corroborated by a response from the Underground Injection Control (UIC) Group on January 19, 2022.**

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

OPERATOR: ___**Holly Energy Partners – Operating, L.P.** _____

WELL NAME & NUMBER: **MW-1**

WELL LOCATION: **Area Surrounding: 32.583874, -103.317460**_____**P**_____**11**_____**20S**_____**36E**__
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

See attached boring log for MW-1

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: _____7.88 inch_____ Casing Size:_____2 inch_____

Top of Cement: __Two (2) ft. bgs_____ Method Determined: Well Construction Log/Installation Notes____

Intermediate Casing

Hole Size: _____NA_____ Casing Size:_____

Cemented with: _____ sx. ***or*** _____ ft^3

Top of Cement: _____ Method Determined: _____

Production Casing

Hole Size: _____NA_____ Casing Size:_____

Cemented with: _____ sx. ***or*** _____ ft^3

Top of Cement: _____ Method Determined: _____

Total Depth: _____

Injection Interval

_____ approx. 29.4 ft bgs _____feet to_____approx. 36.3 ft bgs_____

(**Perforated** or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: _____**NA** _____Lining Material: _____**NA**_____

Type of Packer: _____**NA**_____

Packer Setting Depth: _____**NA**_____

Other Type of Tubing/Casing Seal (if applicable): _____**NA**_____

Additional Data

1. Is this a new well drilled for injection? ____Yes ___**X**___No

If no, for what purpose was the well originally drilled?
Well MW-1 is an existing monitoring well that was installed for Site investigation activities in November 2020. Well MW-1 is being proposed for ambient air injection during a seven-day bioventing pilot test.

2. Name of the Injection Formation: **Vadose zone (unsaturated soils) above uppermost groundwater-bearing unit (Ogallala Aquifer). Note: Injected ambient air is targeting the vadose zone, not the groundwater-bearing unit.**

3. Name of Field or Pool (if applicable): _____**NA**_____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. _____

   _____**No**_____

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: _____

   _____**NA**_____

   _____

   _____

Supplemental Information
Form C-108
Holly Energy Partners – Operating, L.P.
WTX to EMSU Battery Release Site

VI.

Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

Figure 1 depicts wells located within 0.5 mile of proposed injection well MW-1 (i.e., the area of review). Figure 2 depicts wells and soil borings located at the Site, including proposed injection well MW-1. Available data for wells located within 0.5 mile of proposed injection well MW-1 are summarized on the table below.

NMOSE Well ID	Type	Construction	Date Drilled	Distance/ Direction from the Site	Depth (feet bgs)	Details
L14648-POD1	Monitoring	2-inch PVC	November 5, 2020	Site	50	MW-1: Monitoring well installed in 2020 for Site assessment activities.
L14648-POD2	Monitoring	2-inch PVC	November 5, 2020	Site	50	MW-4: Monitoring well installed in 2020 for Site assessment activities.
L14648-POD3	Monitoring	2-inch PVC	November 4, 2020	Site	50	MW-2: Monitoring well installed in 2020 for Site assessment activities.
L14648-POD4	Monitoring	2-inch PVC	November 4, 2020	Site	50	MW-3: Monitoring well installed in 2020 for Site assessment activities.
L14648-POD5	Monitoring	2-inch PVC	May 6, 2021	Site	50	MW-5: Monitoring well installed in 2021 for Site assessment activities.
L14648-POD6	Soil Boring	None	October 5, 2021	Site	35	SB-29: Soil boring installed and plugged in 2021 for Site assessment activities.
L14648-POD7	Soil Boring	None	October 6, 2021	Site	35	SB-30: Soil boring installed and plugged in 2021 for Site assessment activities.
L10251	Domestic/ Livestock Watering	Unknown	Prior to 1931	675 Feet to the Southwest	82	Windmill used for domestic uses and livestock watering was formerly located in this approximate location. Was in use prior to 1931. No longer present.
L15041 POD1	Livestock Watering	Up to 7-inch PVC	November 30, 2020	940 feet to the North-Northeast	63	63-foot-deep well permitted in November 2020 for livestock watering.
L14799 POD1	Livestock Watering	4.5-inch PVC	Unknown	0.5 mile to the Southwest	50	50-foot-deep well re-permitted in December 2019 for livestock watering.
L14816 POD7	Soil Boring	None	August 3, 2020	0.5 mile to the West	32	Environmental soil boring completed and plugged on August 3, 2020, as part of EMSU B #865 delineation by XTO Energy.

Well construction logs for wells L14648-POD1 to -POD5 (MW-1 through MW-5) and soil borings L14648-POD6 (SB-29) and L14648-POD7 (SB-30) are attached. Permit applications, well records, and/or point of diversion summaries for wells and soil borings listed above, as available from NMOSE POD public data, are attached.

Supplemental Information
Form C-108
Holly Energy Partners – Operating, L.P.
WTX to EMSU Battery Release Site

VII.
Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

1. Proposed average and maximum daily rate and volume of fluids to be injected;
Average: 12 cubic feet per minute (cfm)
Maximum: 18 cfm

2. Whether the system is open or closed;
Open

3. Proposed average and maximum injection pressure;
Average: 0.17 pounds per square inch (psi)
Maximum: 0.26 psi

If initial monitoring indicates that less flow is required to supply oxygen to the affected vadose zone, the blower output and associated injection pressure will be reduced.

4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
The injection "fluid" is ambient air, which will be injected into the vadose zone (unsaturated soils) above the uppermost groundwater-bearing unit. Ambient air is compatible with vadose zone soils and will facilitate aerobic bioremediation of hydrocarbon-affected soils.

5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
NA – Not for disposal purposes.

VIII.

Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all

underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

According to the Geologic Map of New Mexico, soils immediately beneath the Site are mapped as quaternary-aged Eolian and piedmont deposits ("Qep"), which consist of interlayered eolian sands and piedmont-slope deposits. These eolian deposits appear to be underlain by the southern edge of the Pliocene-aged Ogallala Formation. The Ogallala Formation consists of fine to very-fine sand but also includes minor quantities of clay, silt, coarse sand, and gravel. Most of the Ogallala is unconsolidated, although beds of caliche have formed near the top of the formation.

During investigations conducted at the Site in 2020 and 2021, the lithology was observed to consist of fine/clayey sand from the ground surface to a depth ranging from 5 to 10 feet bgs; and alternating layers of sandy clay and sandy caliche with cobbles to a depth of 35 to 50 feet bgs. Ambient air injection will be conducted in the vadose zone (unsaturated soils) above the uppermost groundwater-bearing unit, which was encountered beneath the Site at depths ranging from 36 to 38 feet bgs. Soil boring and well construction logs for Site monitoring wells MW-1 through MW-5 are attached.

III A.
The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
L&K Ranch, LLC. [Unit P, Section 11, Township 20S, Range 36E]
MW-1
Latitude: 32.583908
Longitude: -103.317464

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
MW-1
Casing size: 2-inch ID from ground surface to total depth
Depth: 49.43 feet bgs
Cement: Bentonite-cement grout from 2 to 25 feet bgs, hydrated bentonite chips from 25 to 27 feet bgs. Top of cement and bentonite determined by subsurface conditions.
Hole size: 7.88 inches

(3) A description of the tubing to be used including its size, lining material, and setting depth.
NA

Supplemental Information
Form C-108
Holly Energy Partners – Operating, L.P.
WTX to EMSU Battery Release Site

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.
NA

III B.

The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.
Vadose zone soils (quaternary-aged Eolian and piedmont deposits and Ogallala Formation). Ambient air will not be injected into the uppermost groundwater-bearing unit.

(2) The injection interval and whether it is perforated or open-hole.
MW-1 vadose zone injection interval from approximately 29.4 to 36.3 feet bgs. Perforated with 0.010-inch slot screen.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.
MW-1 installed in November 2020 as a groundwater monitoring well. MW-1 proposed for ambient air injection during seven-day bioventing pilot test to determine if bioventing is an effective technology for remediating hydrocarbon-affected soil beneath a depth of 4 feet bgs at the Site.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
None

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.
None

Supplemental Information
Form C-108
Holly Energy Partners – Operating, L.P.
WTX to EMSU Battery Release Site

Figures

TRC - GIS

Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

Plot Date: 3/3/2022, 12:13:57 PM by MJAGOE - - LAYOUT: ANSI B(11"x17")
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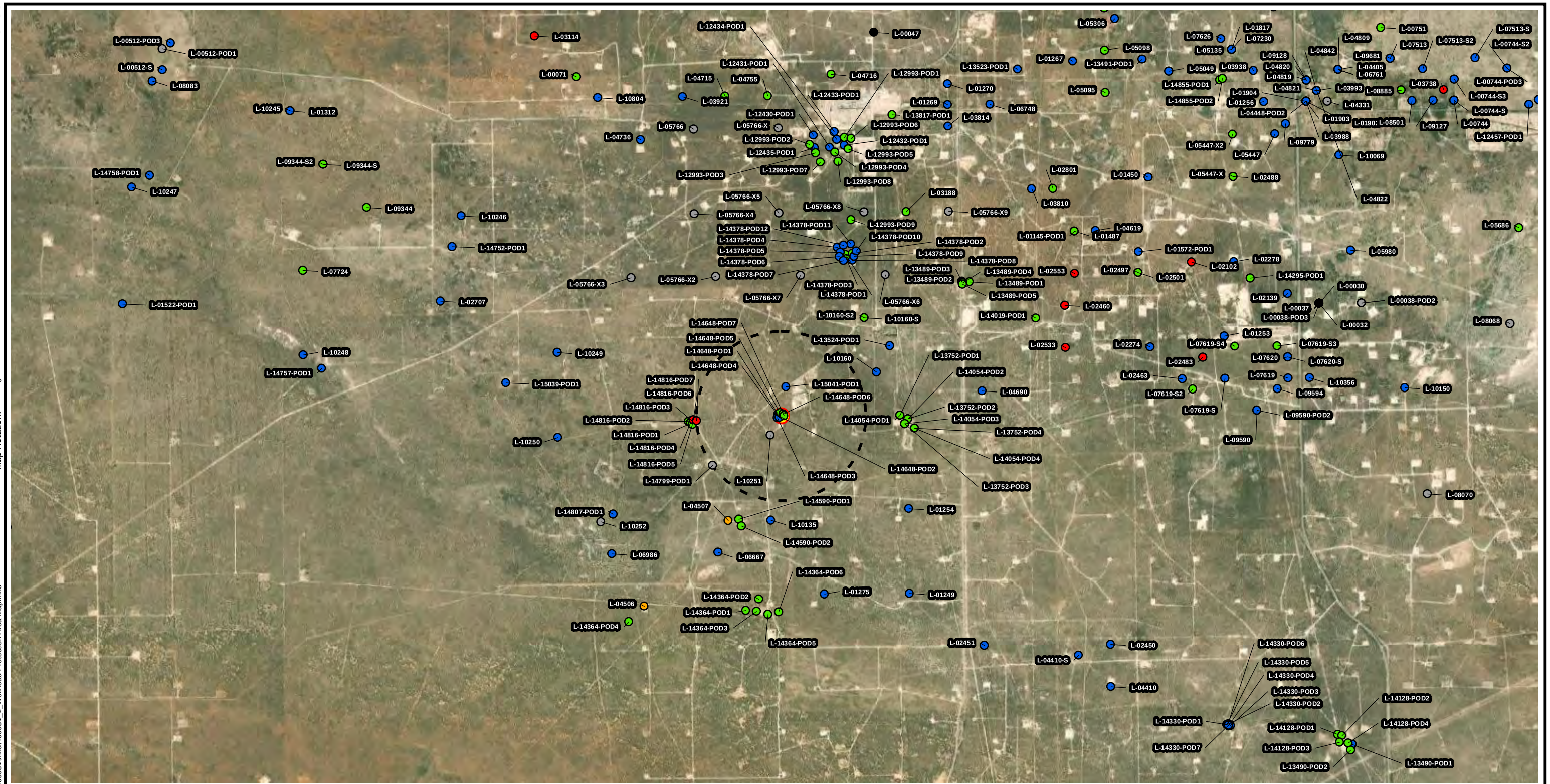


LEGEND

NEW MEXICO OFFICE OF STATE ENGINEER (OSE) POINTS OF DIVERSION (PODS)

- ACTIVE
- INACTIVE
- PENDING
- CAPPED
- PLUGGED
- UNKNOWN

1/2 MILE RADIUS

AERIAL IMAGERY - ERSI WORLD IMAGERY

NOTES:

1. OSE PODs REPRESENT WATER WELLS AND GROUNDWATER RIGHTS THAT HAVE BEEN REGISTERED WITH THE OSE.
2. OIL AND GAS LEASE INFORMATION IS NOT PROVIDED BECAUSE THE PROPOSED INJECTION ZONE (LESS THAN 40 FEET BELOW GROUND SURFACE) IS NOT AN OIL AND GAS PRODUCTION ZONE.

N

0 3,000 6,000 Feet

1 " = 3,000 '
1:36,000

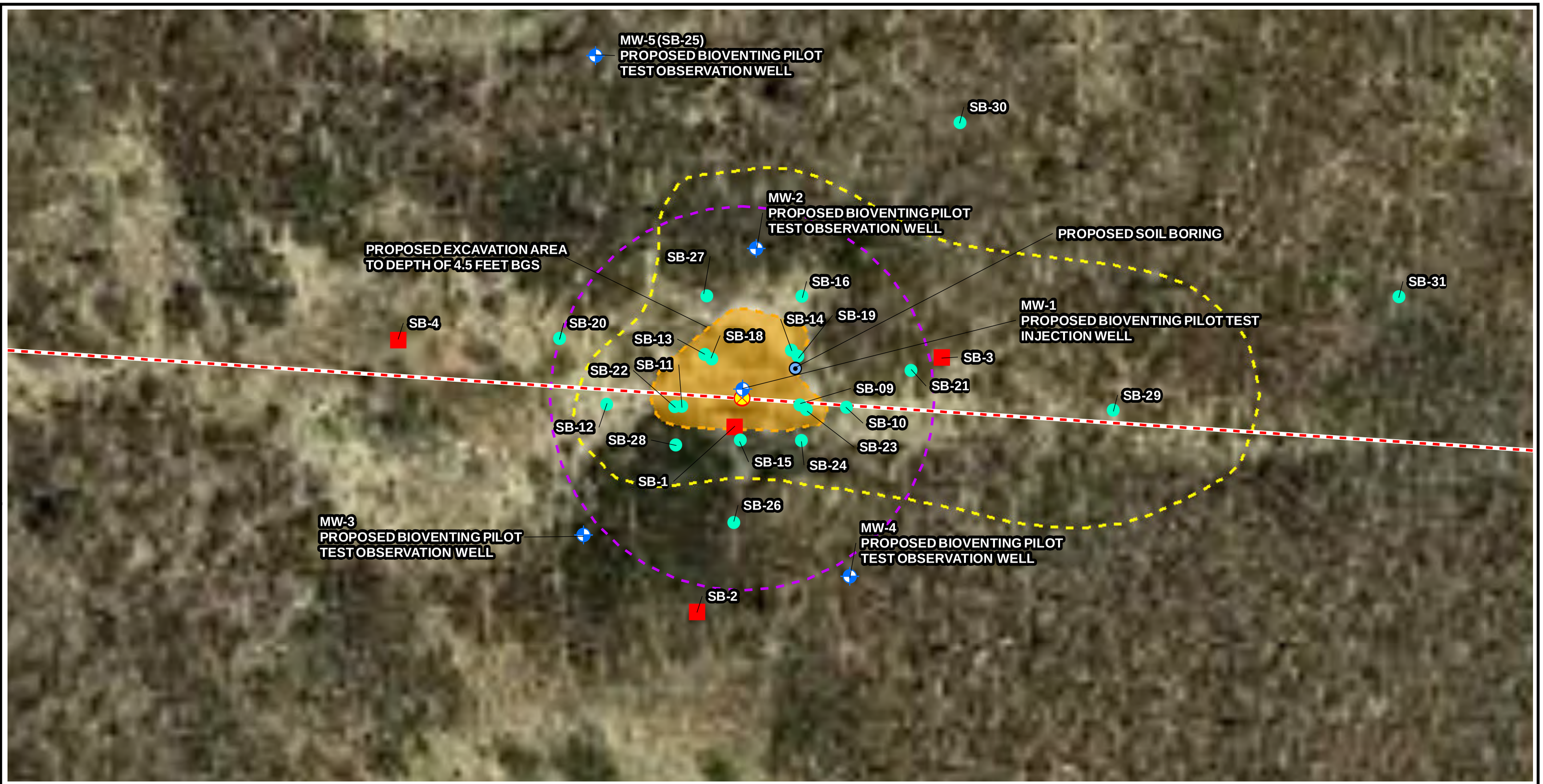
PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

TITLE:
WELLHEAD PROTECTION AREA MAP

DRAWN BY:	M. JAGOE	PROJ NO.:	466951
CHECKED BY:			
APPROVED BY:			**FIGURE 1**
DATE:	MARCH 2022		

505 East Huntland Drive
Suite #250
Austin, TX 78752
Phone: 512.329.6080

FILE NO.: 466951_1_Wellhead Protection Area Map.mxd



LEGEND

- GHD SOIL BORING LOCATION
- OBSERVATION WELL/SOIL BORING LOCATION
- TRC SOIL BORING LOCATION
- 6" GATHERING LINE
- RELEASE LOCATION
- PROPOSED SOIL BORING LOCATION
- ANTICIPATED BIOVENTING PILOT TEST RADIUS OF INFLUENCE (50 FEET)
- PROPOSED EXCAVATION AREA TO DEPTH OF 4.5 FEET BGS
- EXTENT OF SURFACE SOIL (0-4 FEET BGS) WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA
- EXTENT OF SOIL BENEATH 4 FEET BGS WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA

SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

NOTES:
1. GHD SOIL SAMPLES (SB-1 THROUGH SB-4) COLLECTED ON 9/28/2018.
2. TRC SOIL SAMPLES (SB-05 THROUGH SB-16) COLLECTED ON 11/3-6/2020.
3. TRC SOIL SAMPLES (SB-18 THROUGH SB-28) COLLECTED ON 5/24-28/2021.
4. SB-17 INADVERTENTLY SKIPPED
5. TRC SOIL SAMPLES FROM SB-29 THROUGH SB-31 COLLECTED ON OCTOBER 5-7, 2021
6. EXCAVATION WAS BACKFILLED IN AUGUST 2018.

SUBMITTED AS FIGURE 1 OF THE REMEDIATION WORK PLAN ADDENDUM

N

0 12.5 25 Feet

1 " = 25 '
1:300

PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

TITLE:
PROPOSED SOIL REMEDIATION PLAN

DRAWN BY:	M. JAGOE	PROJ NO.:	426140
CHECKED BY:	B. GILBERT		
APPROVED BY:	S. HOOVER		FIGURE 2
DATE:	MARCH 2022		

505 East Huntland Drive, Suite 250
Austin, TX 78752
Phone: 512.329.6080
www.trcsolutions.com

FILE NO.: 466951_1_AOI.mxd

Plot Date: 3/21/2022, 12:08:34 PM by MJAGOE -- LAYOUT: ANSI B (11"x17")
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Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0
TRC - GIS

Supplemental Information
Form C-108
Holly Energy Partners – Operating, L.P.
WTX to EMSU Battery Release Site

Table

TABLE 1- FORM C-108 APPLICATION
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE, LEA COUNTY, NM

Monitoring Well ID	Sample Date	Constituent of Concern (COC)								
		BTEX (mg/L)				TPH (mg/L)				
		Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	MRO	TDS (mg/L)	Chloride (mg/L)
Groundwater Action Levels		**0.005**	**0.7**	**1.0**	**0.62**	None	None	None	None	**250**
MW-1	11/7/2020	<0.005	<0.005	<0.010	<0.005	**0.098**	**0.084**	<0.10	**3000**	**1260**
	5/28/2021	<0.005	<0.005	<0.005	<0.005	<0.0050	**0.24**	<0.10	NA	**1270**
	5/28/2021 (Dup-04)	<0.005	<0.005	<0.005	<0.005	<0.050	**0.17**	<0.10	NA	**1250**
	10/12/2021	<0.005	<0.005	<0.005	<0.005	<0.050	**0.052**	<0.10	NA	**1280**
MW-2	11/7/2020	<0.005	<0.005	<0.010	<0.005	<0.050	<0.050	<0.10	**2970**	**1210**
	5/25/2021	<0.005	<0.005	<0.005	<0.005	<0.050	**0.12**	<0.10	NA	**1250**
	10/6/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	**1220**
MW-3	11/7/2020	<0.005	<0.005	<0.010	<0.005	<0.050	<0.050	<0.10	**1970**	**736**
	5/25/2021	<0.005	<0.005	<0.005	<0.005	<0.050	**0.11**	<0.10	NA	**849**
	10/12/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	**862**
MW-4	11/7/2020	<0.005	<0.005	<0.010	<0.005	<0.050	<0.050	<0.10	**3020**	**1190**
	5/25/2021	<0.005	<0.005	<0.005	<0.005	<0.050	**0.064**	<0.10	NA	**1310**
	10/6/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	**1230**
	10/6/2021 (DUP-01)	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	**1280**
MW-5	5/28/2021	<0.005	<0.005	<0.005	<0.005	<0.050	**0.22**	<0.10	**3690**	**1170**
	10/12/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	**1230**

Notes:
Groundwater Action Levels = Human health and drinking water standards for groundwater obtained from various sources
BTEX-Human Health Standards for Groundwater obtained from NMAC 20.6.2.3103 (A).
NMOCD does not have a groundwater action level for TPH.
Chloride-Other Standards for Domestic Water Supply obtained from NMAC 20.6.2.3103 (B).
BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Method 8260.
TPH = Total Petroleum Hydrocarbons by EPA Method 8015.
GRO = Gasoline Range Organics.
DRO = Diesel Range Organics.
MRO = Motor Oil Range Organics.
Chloride by EPA Method 300.0.
COC = consitituent of concern.
mg/L = milligrams of COC per Liter of groundwater.
NA = not analyzed.
Detected concentrations reported in bold.
Gold shading represents concentration above Other Standards for Domestic Water Supply.
Duplicate sample data provided immediately below paired assessment sample.

Source: Table 4 of *Site Characterization Report and Remediation Workplan*, WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release, NMOCD Incident No NOY1822242858, dated November 2021.

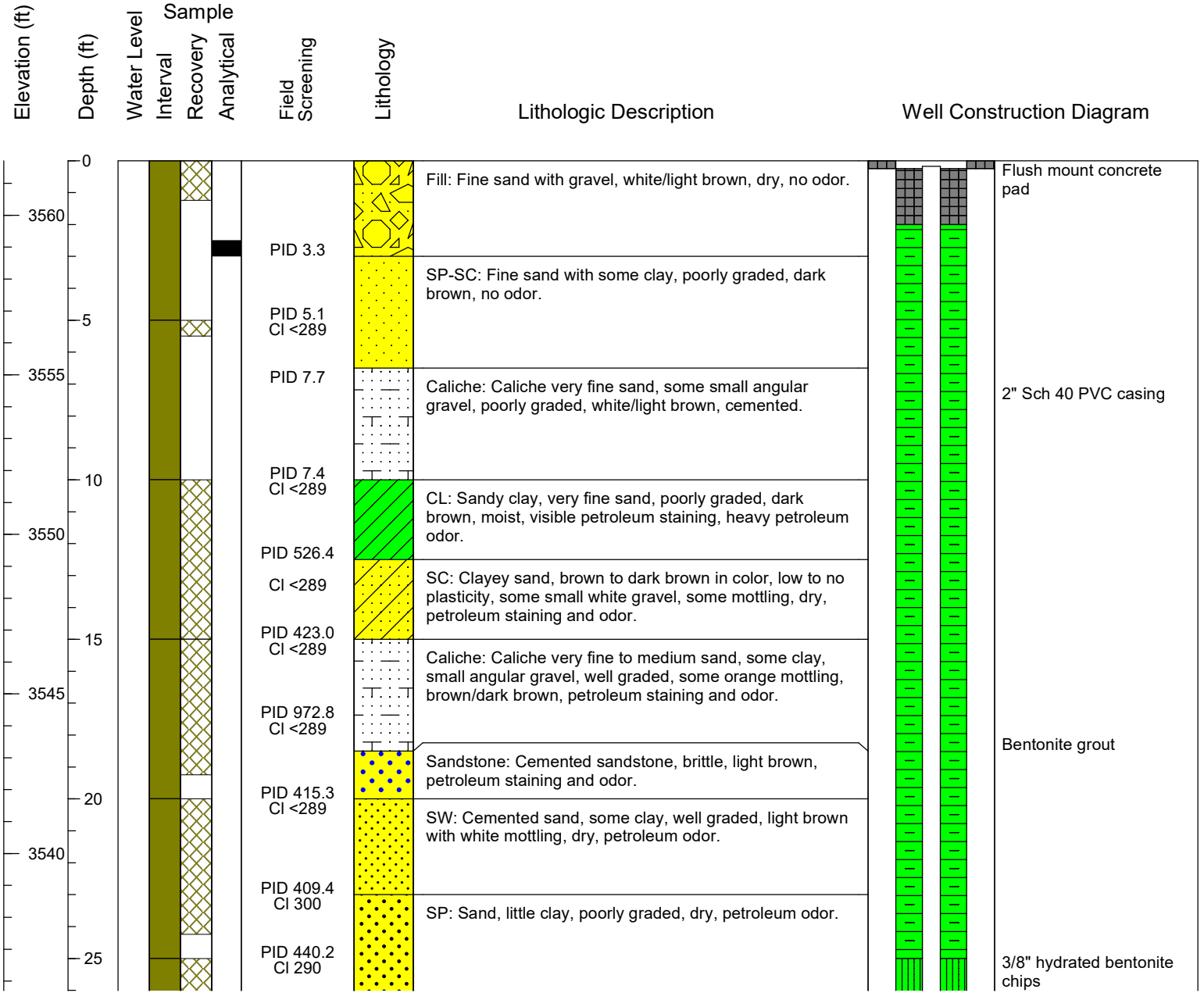
Supplemental Information
Form C-108
Holly Energy Partners – Operating, L.P.
WTX to EMSU Battery Release Site

Well Construction Log – MW-1

BORING LOG and WELL CONSTRUCTION

MW-01 (SB-05)

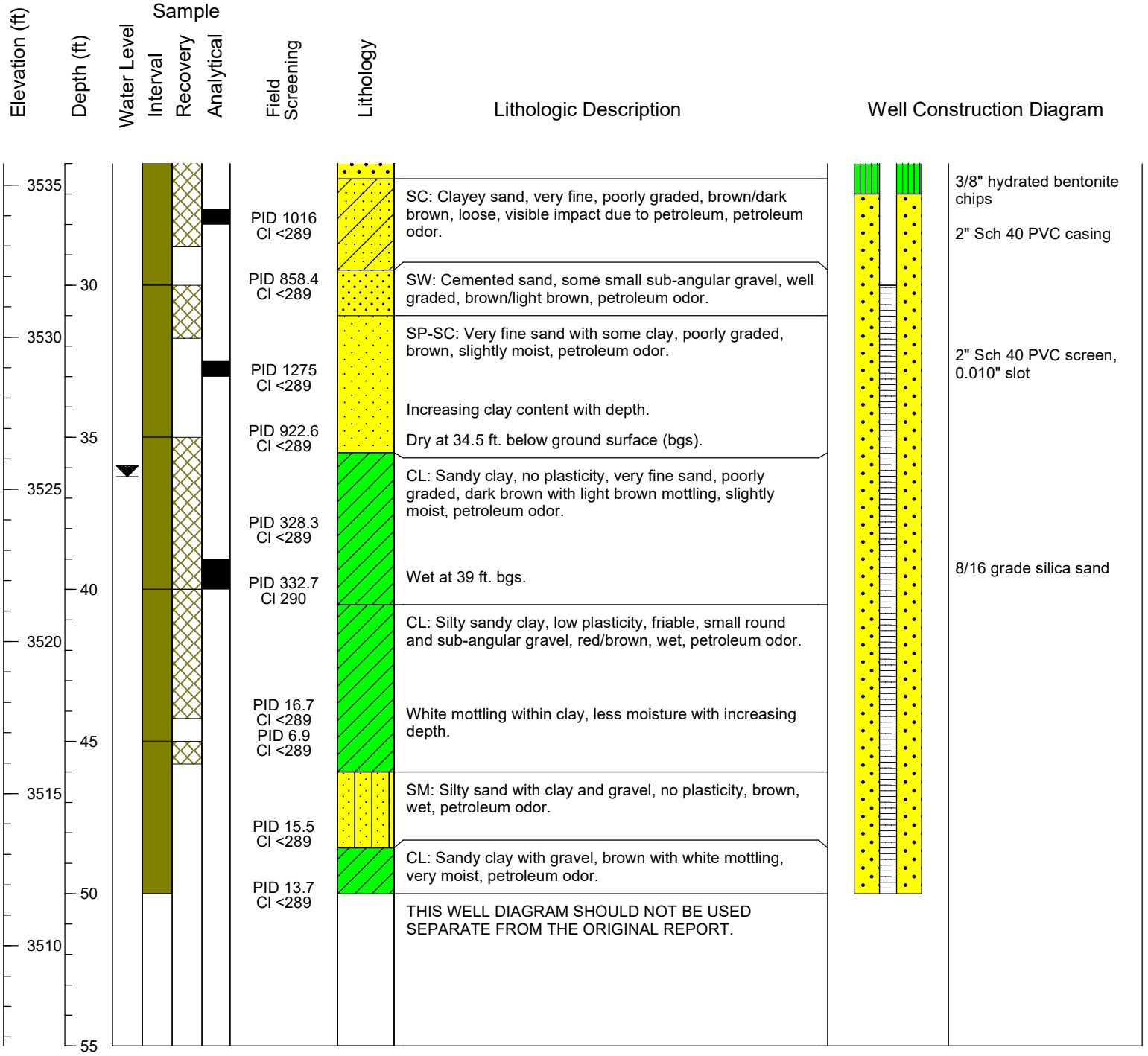
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/03/2020
Address: Klein Ranch, Monument, NM	Finish Date: 11/03/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.583908
Blow Count Method: NA	Longitude: -103.317464
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3561.71
Well Depth (ft bgs): 49.43 — Well Depth (ft toc): 49.25	Well Elevation (ft): 3561.53
Casing Length (ft): 29.25 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 36.29
Well Development: Purged 55 gallons	Date/Time: 11/07/2020 16:00



BORING LOG and WELL CONSTRUCTION

MW-01 (SB-05)

Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	Page 2 of 2



Supplemental Information
Form C-108
Holly Energy Partners – Operating, L.P.
WTX to EMSU Battery Release Site

Well Information for Wells Within Area of Review

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
NA	L 14648 POD1	2	4	4	11	20S	36E	657890	3606425

Driller License: 1800 **Driller Company:** TALON/LPE

Driller Name: MICHALSKY, JAROD.TY"ENER

Drill Start Date: 11/03/2020 **Drill Finish Date:** 11/06/2020 **Plug Date:**

Log File Date: 01/19/2021 **PCW Rcv Date:** **Source:** Shallow

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

Casing Size: 2.00 **Depth Well:** 50 feet **Depth Water:** 36 feet

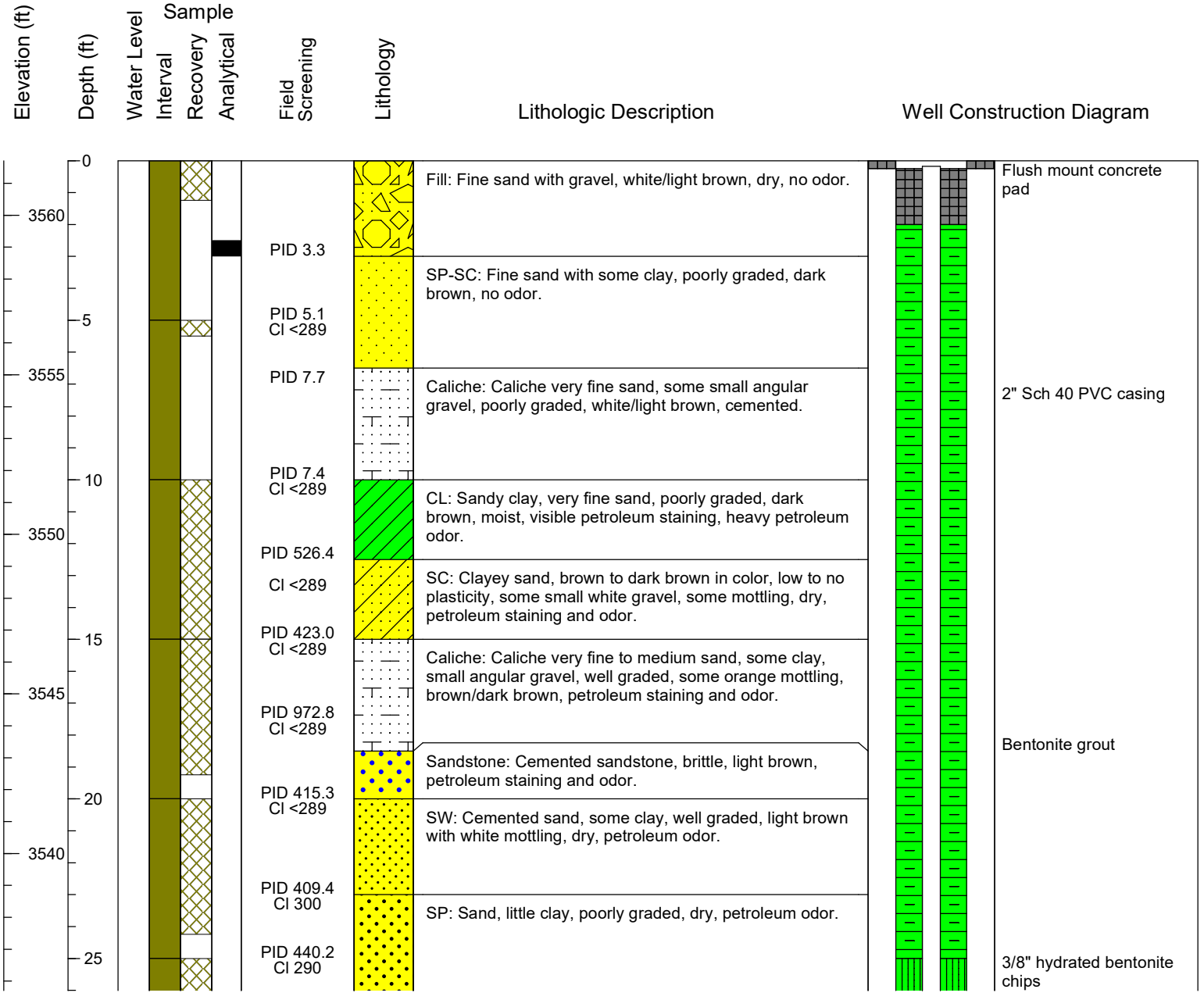
Water Bearing Stratifications:	Top	Bottom	Description
	36	44	Sandstone/Gravel/Conglomerate
	44	46	Shale/Mudstone/Siltstone
	46	50	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	30	50

BORING LOG and WELL CONSTRUCTION

MW-01 (SB-05)

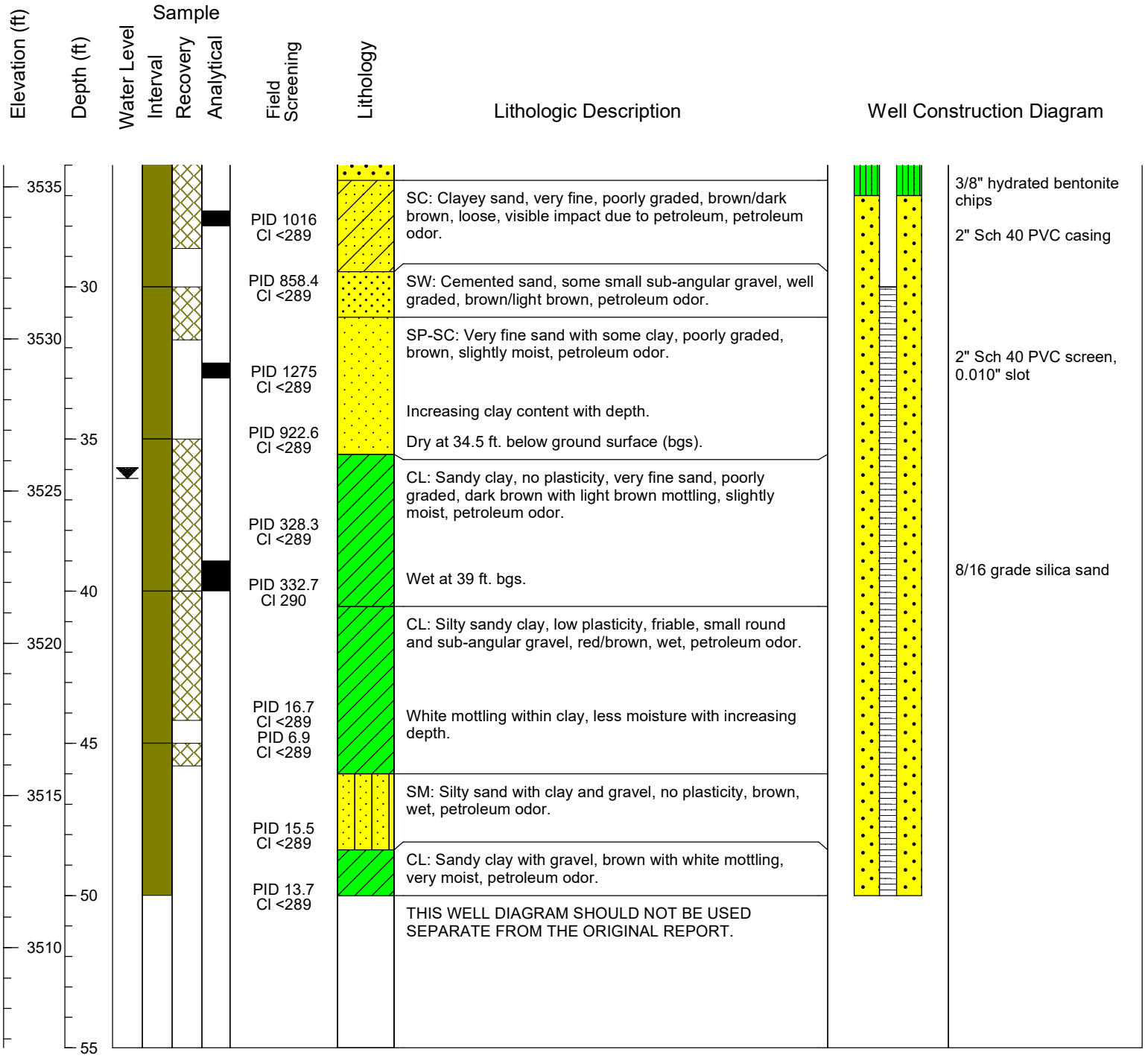
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/03/2020
Address: Klein Ranch, Monument, NM	Finish Date: 11/03/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.583908
Blow Count Method: NA	Longitude: -103.317464
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3561.71
Well Depth (ft bgs): 49.43 — Well Depth (ft toc): 49.25	Well Elevation (ft): 3561.53
Casing Length (ft): 29.25 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 36.29
Well Development: Purged 55 gallons	Date/Time: 11/07/2020 16:00



BORING LOG and WELL CONSTRUCTION

MW-01 (SB-05)

Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	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
NA	L 14648 POD2	2	4	4	11	20S	36E	657892	3606410

Driller License: 1800 **Driller Company:** TALON/LPE

Driller Name: MICHALSKY, JAROD.TY"ENER

Drill Start Date: 11/05/2020 **Drill Finish Date:** 11/06/2020 **Plug Date:**

Log File Date: 01/19/2021 **PCW Rcv Date:** **Source:** Shallow

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

Casing Size: 2.00 **Depth Well:** 50 feet **Depth Water:** 39 feet

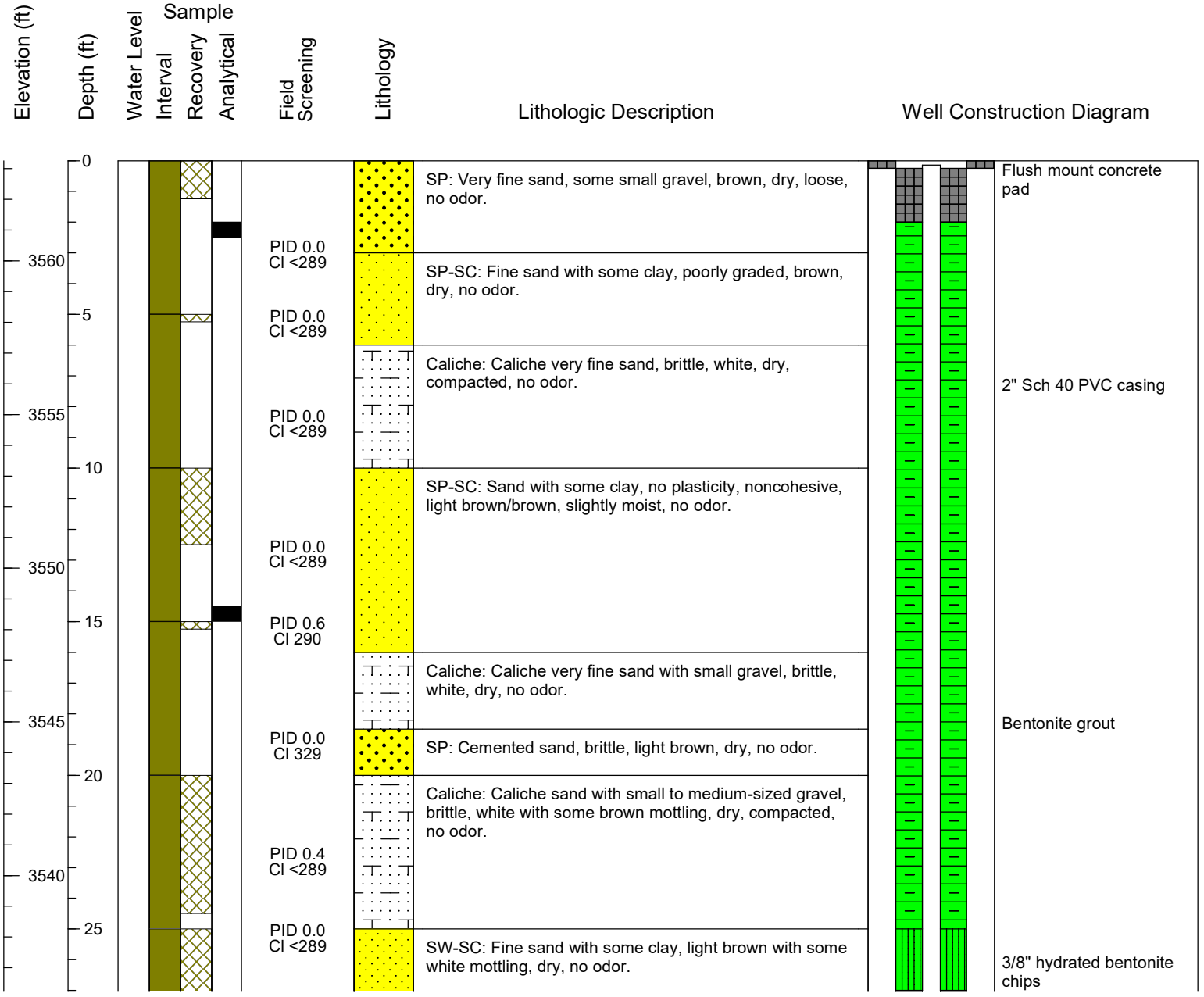
Water Bearing Stratifications:	Top	Bottom	Description
	39	42	Sandstone/Gravel/Conglomerate
	42	50	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	30	50

BORING LOG and WELL CONSTRUCTION

MW-04 (SB-08)

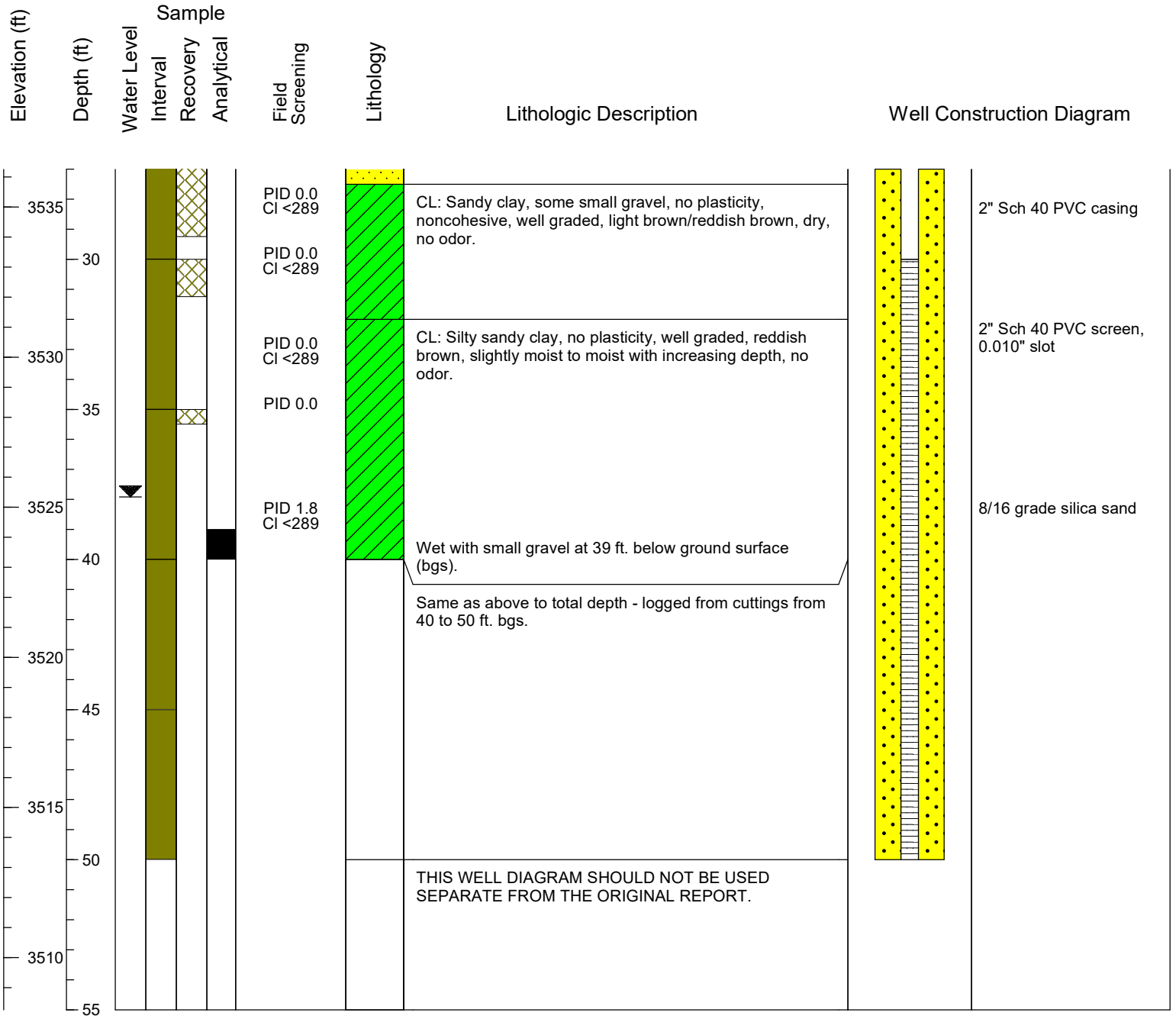
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/05/2020
Address: Klein Ranch, Monument, NM	Finish Date: 11/05/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.583756
Blow Count Method: NA	Longitude: -103.317355
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3563.26
Well Depth (ft bgs): 50.45 — Well Depth (ft toc): 50.31	Well Elevation (ft): 3563.12
Casing Length (ft): 30.31 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 37.92
Well Development: Purged 100 gallons	Date/Time: 11/07/2020 11:45



BORING LOG and WELL CONSTRUCTION

MW-04 (SB-08)

Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	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
NA	L 14648 POD3	2	4	4	11	20S	36E	657884	3606394

Driller License: 1800 **Driller Company:** TALON/LPE

Driller Name: MICHALSKY, JAROD.TY"ENER

Drill Start Date: 11/04/2020 **Drill Finish Date:** 11/06/2020 **Plug Date:**

Log File Date: 01/19/2021 **PCW Rcv Date:** **Source:** Shallow

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

Casing Size: 2.00 **Depth Well:** 50 feet **Depth Water:** 39 feet

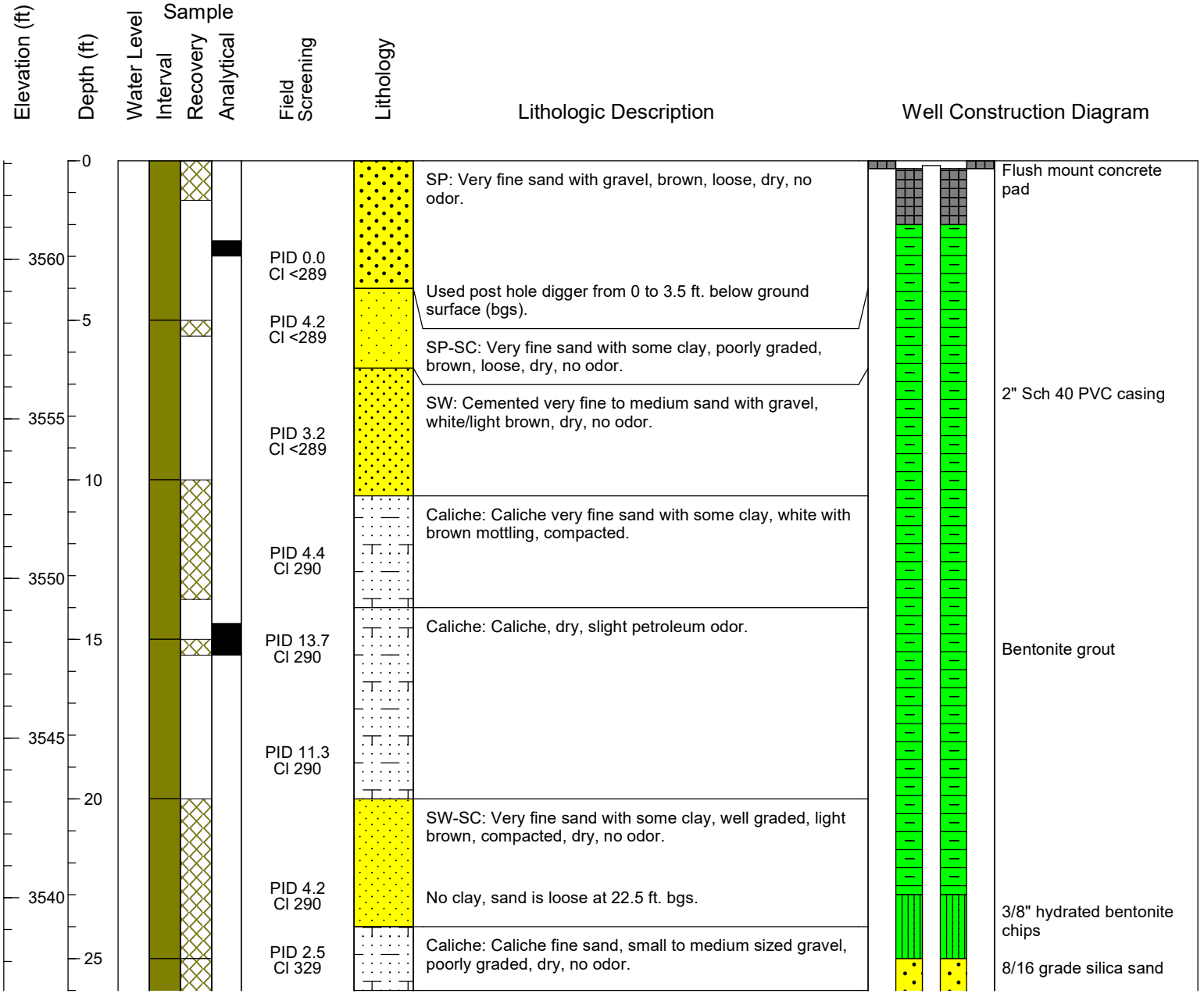
Water Bearing Stratifications:	Top	Bottom	Description
	35	48	Sandstone/Gravel/Conglomerate
	48	50	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	30	50

BORING LOG and WELL CONSTRUCTION

MW-02 (SB-06)

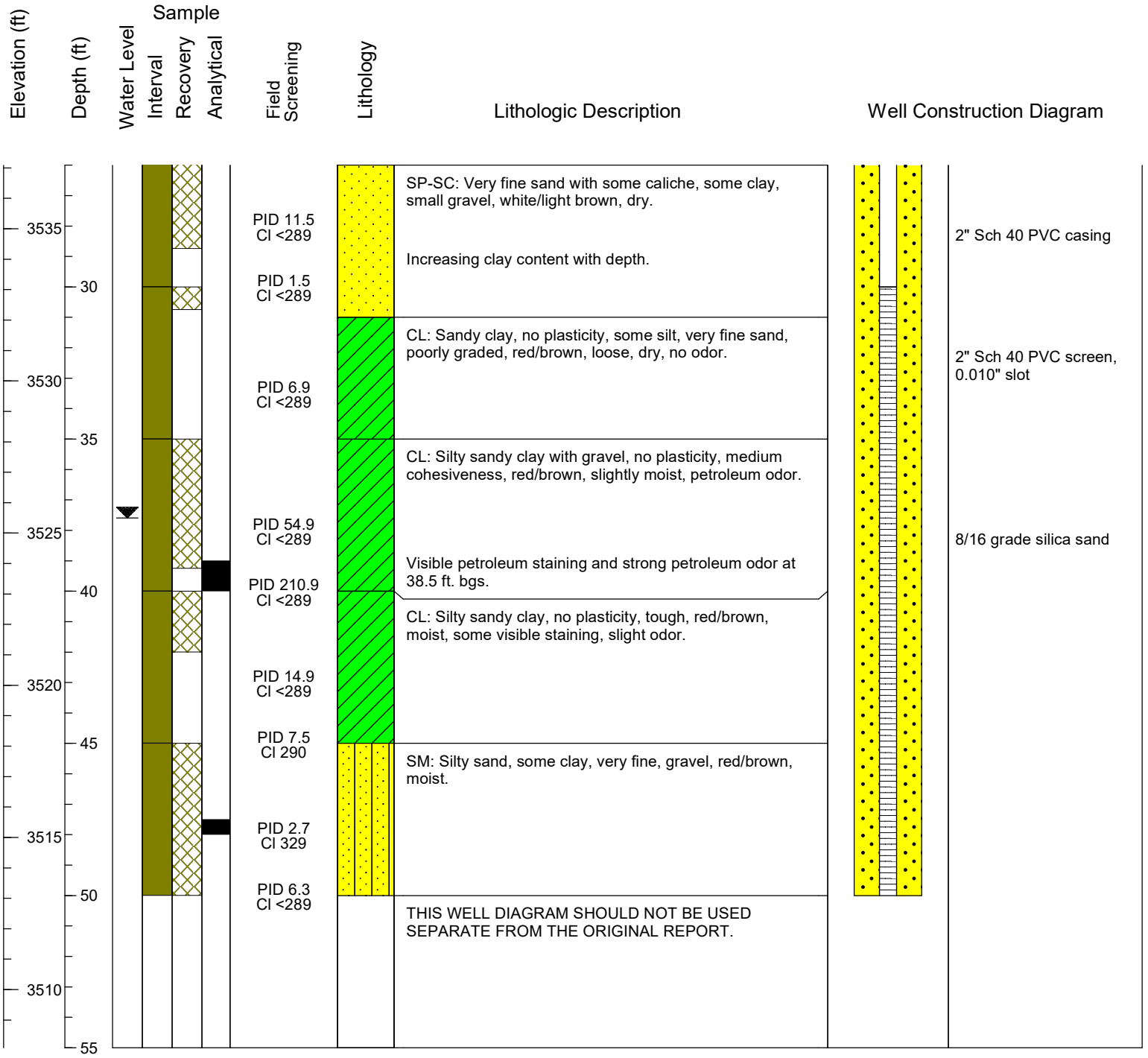
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/04/2020
Address: Klein Rach, Monument, NM	Finish Date: 11/04/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.584046
Blow Count Method: NA	Longitude: -103.317430
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3563.09
Well Depth (ft bgs): 49.64 — Well Depth (ft toc): 49.49	Well Elevation (ft): 3562.94
Casing Length (ft): 29.49 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 37.59
Well Development: Purged 55 gallons	Date/Time: 11/07/2020 13:45



BORING LOG and WELL CONSTRUCTION

MW-02 (SB-06)

Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	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
NA	L 14648 POD4	2	4	4	11	20S	36E	657903	3606396

Driller License: 1800 **Driller Company:** TALON/LPE

Driller Name: MICHALSKY, JAROD.TY"ENER

Drill Start Date: 11/04/2020 **Drill Finish Date:** 11/16/2020 **Plug Date:**

Log File Date: 01/19/2021 **PCW Rcv Date:** **Source:** Shallow

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

Casing Size: 2.00 **Depth Well:** 50 feet **Depth Water:** 40 feet

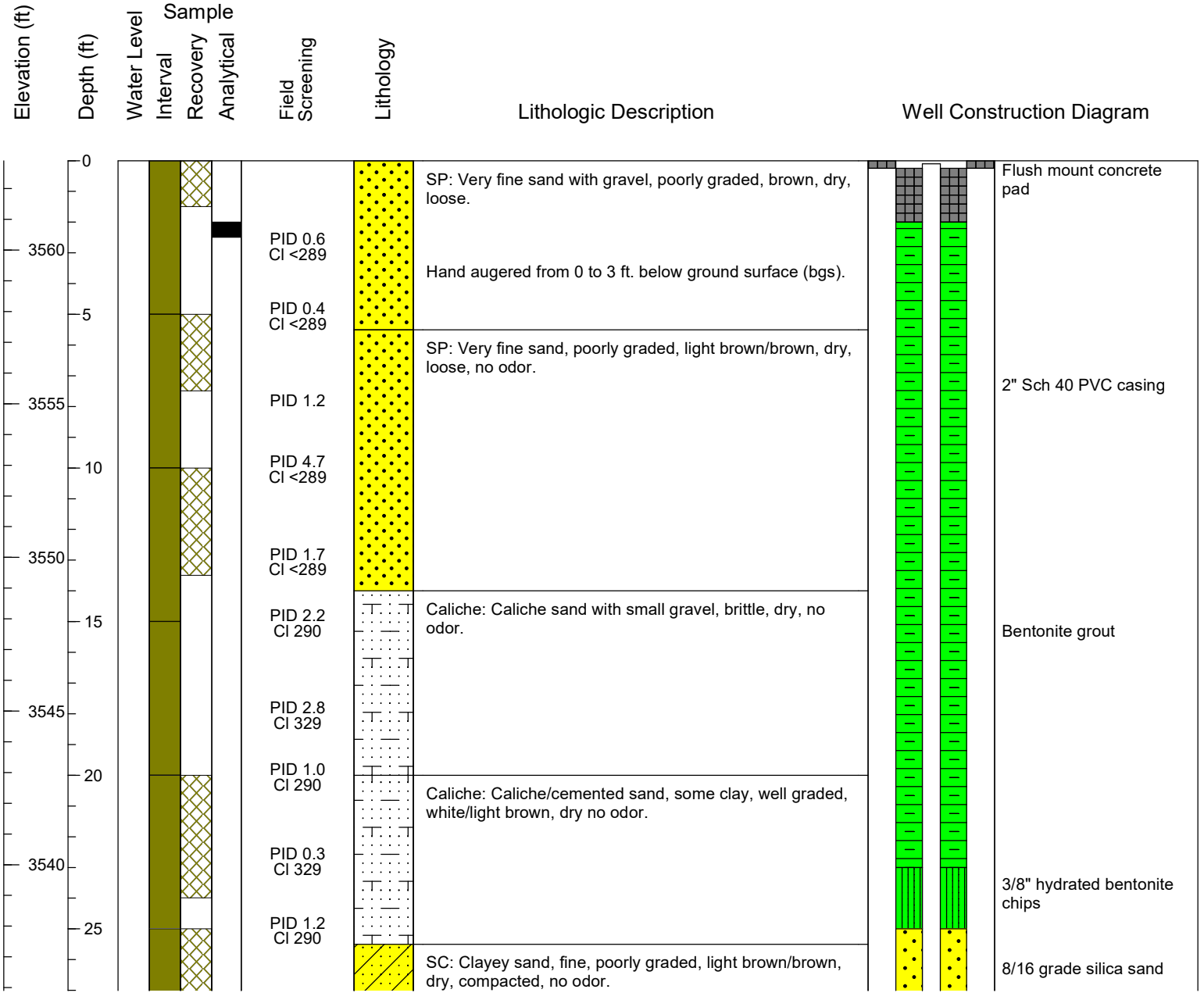
Water Bearing Stratifications:	Top	Bottom	Description
	35	46	Sandstone/Gravel/Conglomerate
	46	50	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	30	50

BORING LOG and WELL CONSTRUCTION

MW-03 (SB-07)

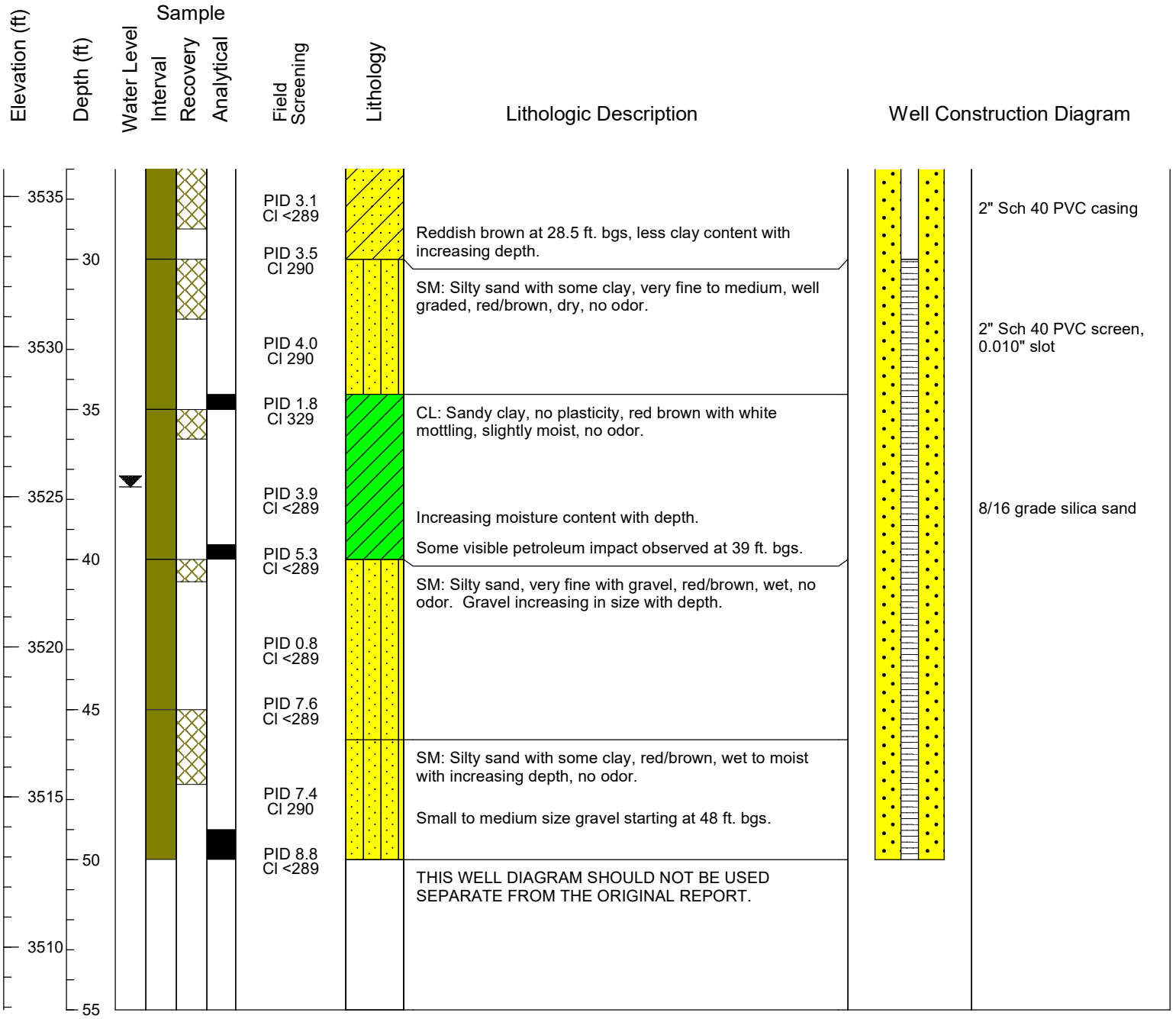
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/04/2020
Address: Klein Ranch, Monument, NM	Finish Date: 11/04/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.583788
Blow Count Method: NA	Longitude: 103.317594
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / mg/L	Ground Elevation (ft): 3562.91
Well Depth (ft bgs): 50.03 — Well Depth (ft toc): 49.93	Well Elevation (ft): 3562.81
Casing Length (ft): 29.93 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 37.58
Well Development: Purged 30 gallons	Date/Time: 11/07/2020 09:00



BORING LOG and WELL CONSTRUCTION

MW-03 (SB-07)

Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	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
NA	L 14648 POD5	4	2	4	11	20S	36E	657907	3606439

Driller License: **Driller Company:**

Driller Name:

Drill Start Date: **Drill Finish Date:** **Plug Date:**

Log File Date: **PCW Rcv Date:** **Source:**

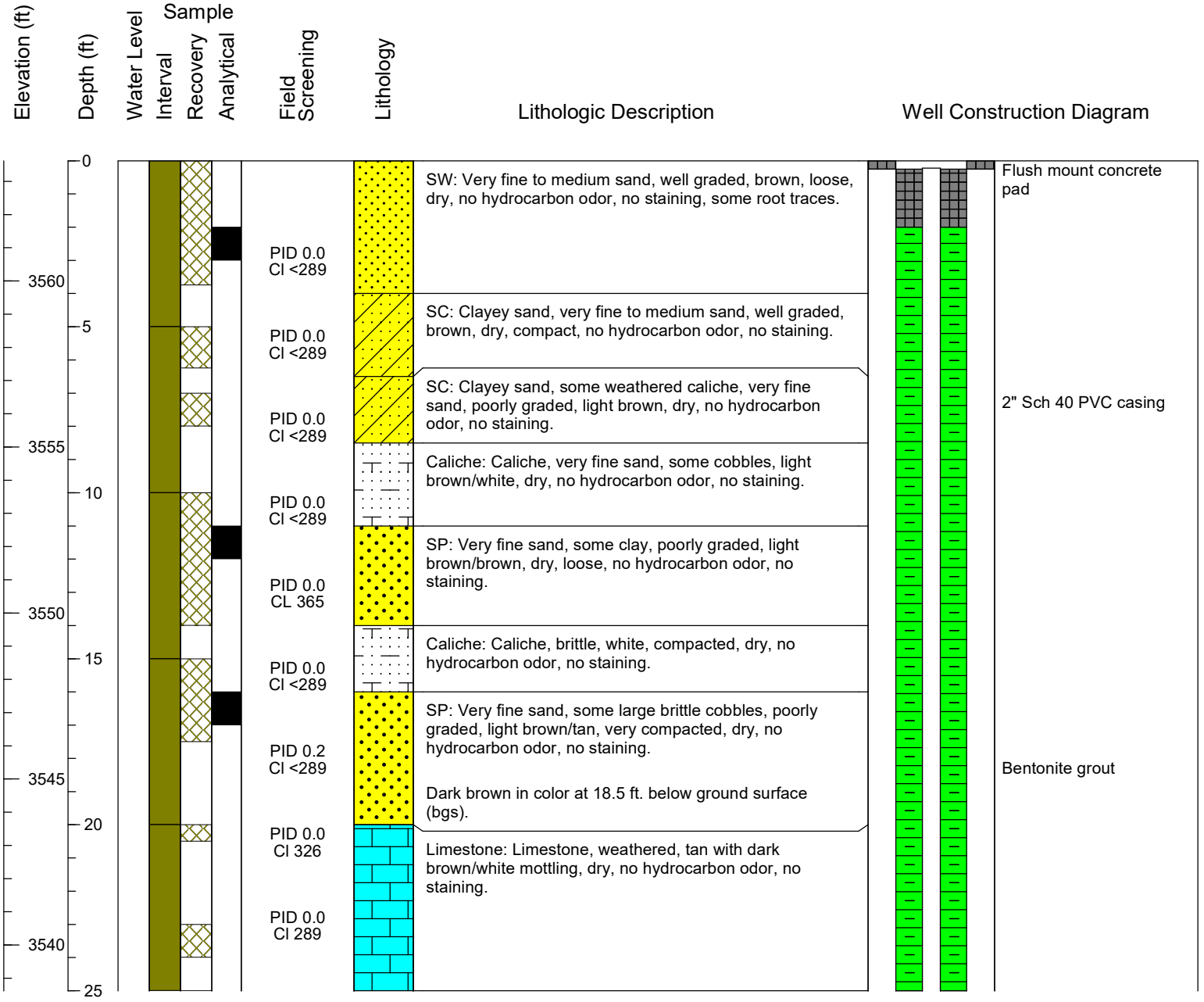
Pump Type: **Pipe Discharge Size:** **Estimated Yield:**

Casing Size: **Depth Well:** **Depth Water:**

BORING LOG and WELL CONSTRUCTION

MW-05 (SB-25)

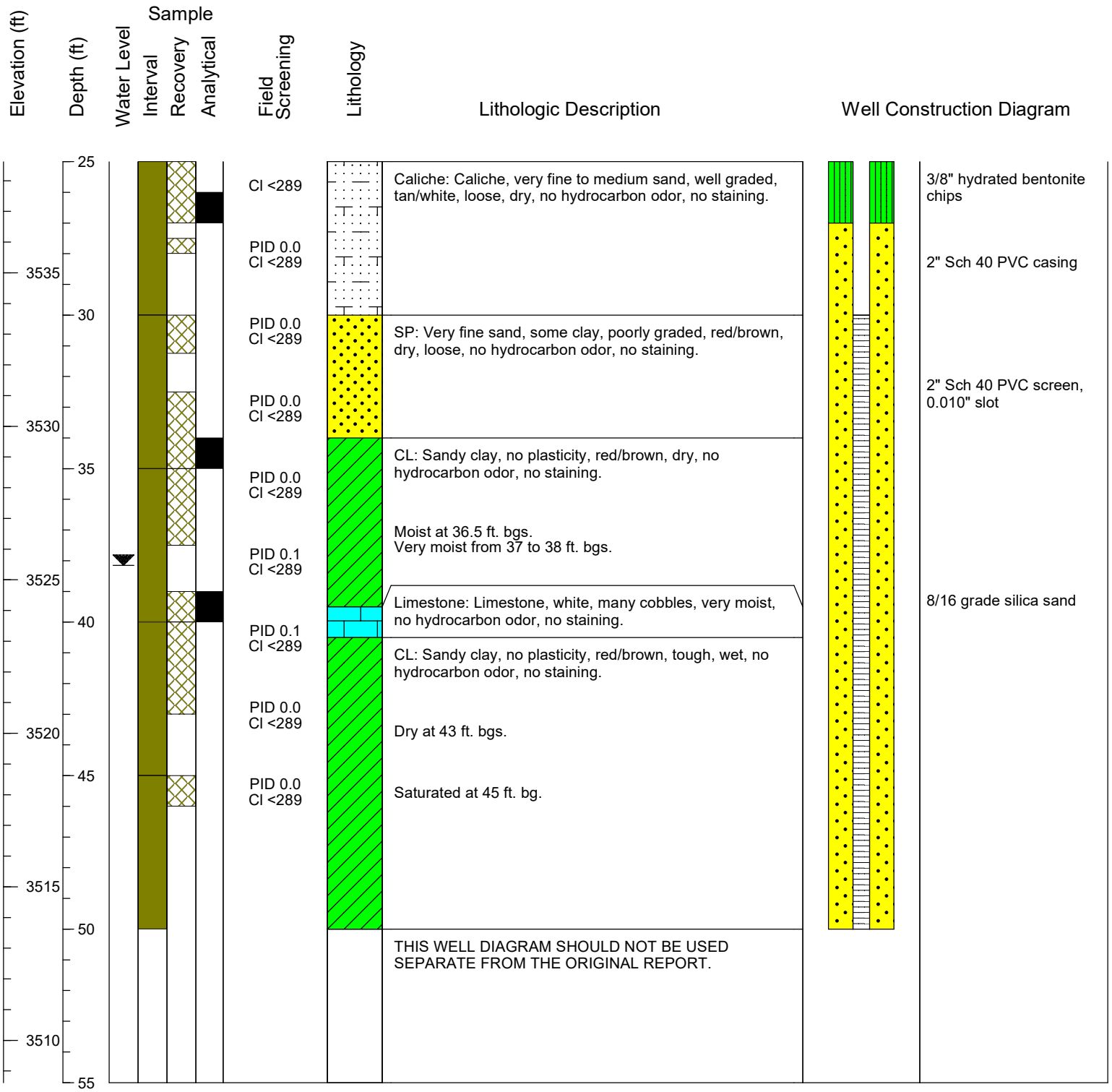
Client: Holly Energy Partners	TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 5/26/2021
Address: Klein Ranch, Monument, NM	Finish Date: 5/28/2021
Project: Site Assessment	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875 — Boring Depth (ft bgs): 50.0	Coord. System: NAD 83
Sampling Method: Continuous 5-ft Core Sampler	Latitude: 32.584131
Blow Count Method: NA	Longitude: -103.317565
Field Screening Parameter: Volatile Organic Compounds / Chlorine	Elevation Datum: NAVD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3536.62
Well Depth (ft bgs): 50.0 — Well Depth (ft toc): 49.72	Well Elevation (ft): 3563.40
Casing Length (ft): 30.0 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 38.15
Well Development: Purged 7 liters	Date/Time: 5/28/2021 17:15



BORING LOG and WELL CONSTRUCTION

MW-05 (SB-25)

Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 426140	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
NA	L 14648 POD6	2	4	4	11	20S	36E	657937	3606426

Driller License: **Driller Company:**

Driller Name:

Drill Start Date: **Drill Finish Date:** **Plug Date:**

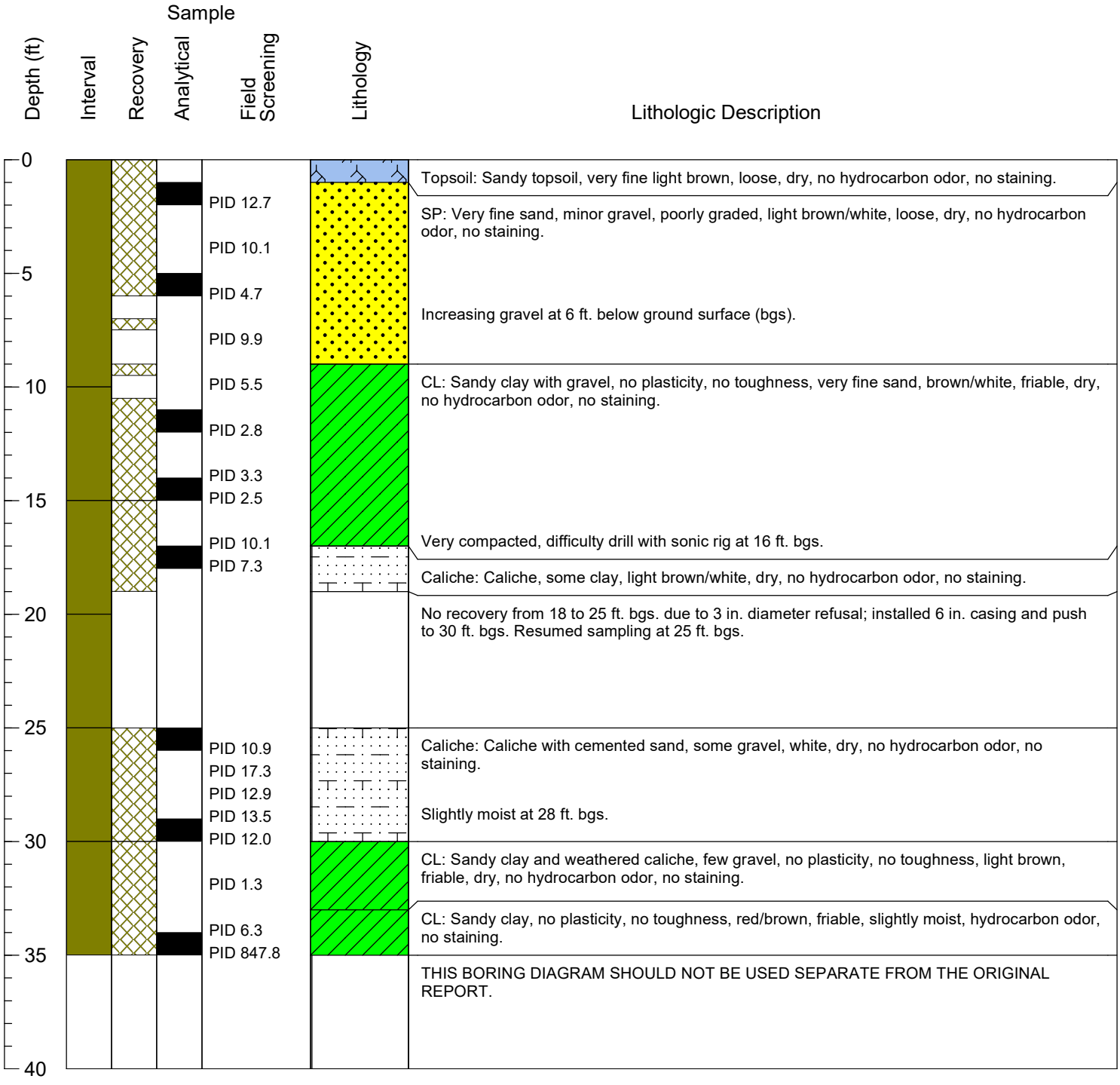
Log File Date: **PCW Rcv Date:** **Source:**

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

Casing Size: **Depth Well:** **Depth Water:**

BORING LOG SB-29

Client: Holly Energy Partners	TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 10/05/2021
Address: Klein Ranch, Monument, NM	Finish Date: 10/05/2021
Project: Site Assessment	Permit #: N/A
Drilling Company: Talon LPE — Drilling Crew: Daniel Martinez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Sonic Drilling	TRC Reviewer: R. Varnell
Boring Diameter (in): 6" outer; 3" inner — Boring Depth (ft bgs): 35.0	Coord. Sys.: WGS 84
Sampling Method: 10-ft Core Sampler; Continuous 5-ft Core Sampler	Latitude: 32.5838942
Blow Count Method: N/A — Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3171446
Field Screening Parameter: Volatile Organic Compounds	Elevation Datum: N/A
Meter: MiniRAE 3000 — Units: ppm	Ground Elevation (ft): NM



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
NA	L 14648 POD7	2	4	4	11	20S	36E	657948	3606411

Driller License: **Driller Company:**

Driller Name:

Drill Start Date: **Drill Finish Date:** **Plug Date:**

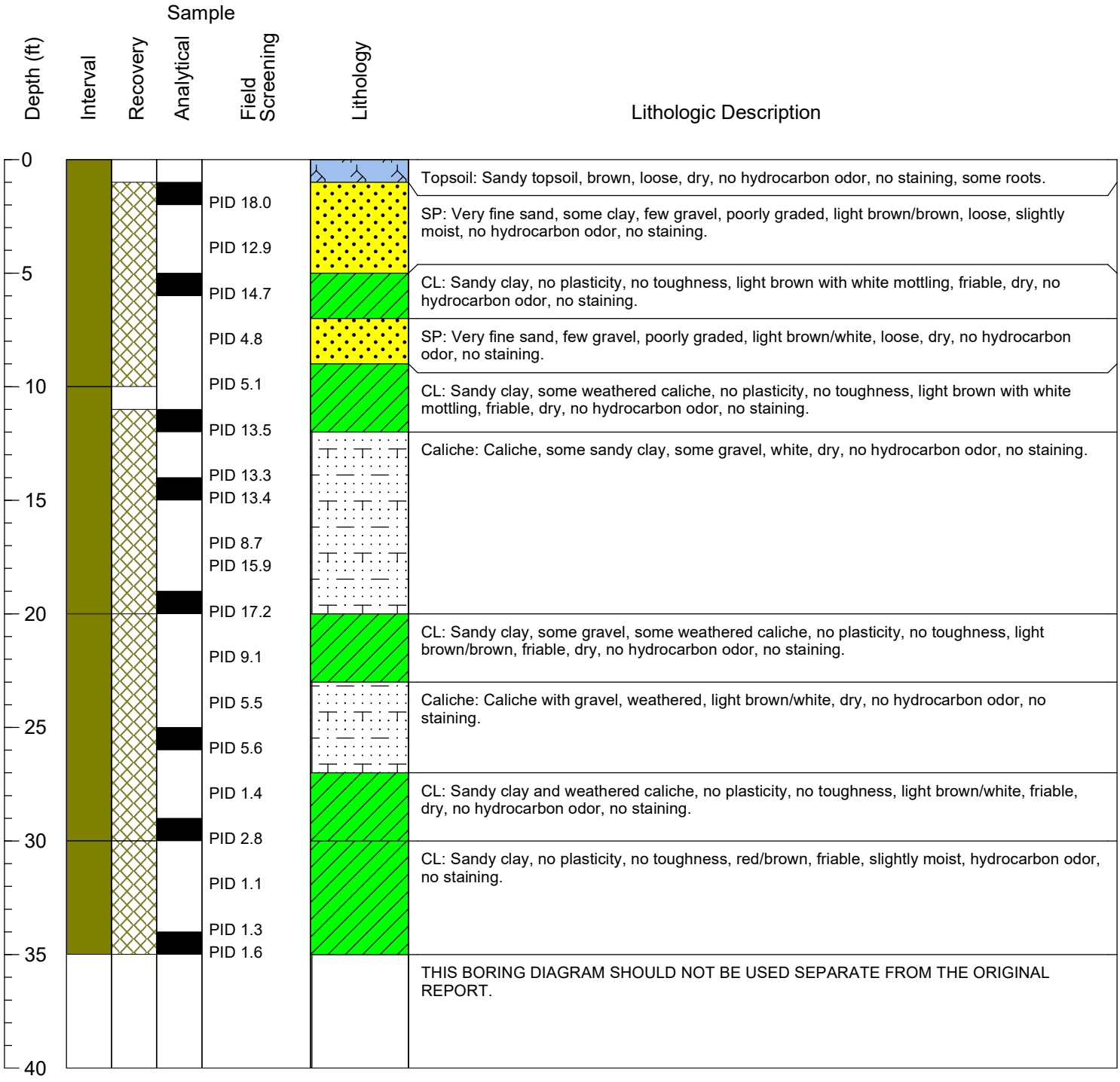
Log File Date: **PCW Rcv Date:** **Source:**

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

Casing Size: **Depth Well:** **Depth Water:**

BORING LOG SB-30

Client: Holly Energy Partners	TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 10/06/2021
Address: Klein Ranch, Monument, NM	Finish Date: 10/06/2021
Project: Site Assessment	Permit #: N/A
Drilling Company: Talon LPE — Drilling Crew: Daniel Martinez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Sonic Drilling	TRC Reviewer: R. Varnell
Boring Diameter (in): 6" outer; 3" inner — Boring Depth (ft bgs): 35.0	Coord. Sys.: N/A
Sampling Method: Continuous 10-ft Core Sampler	Latitude: NM
Blow Count Method: N/A — Grout: 3/8" Hydrated Bentonite Chips	Longitude: NM
Field Screening Parameter: Volatile Organic Compounds	Elevation Datum: N/A
Meter: MiniRAE 3000 — Units: ppm	Ground Elevation (ft): NM



John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 671633
File Nbr: L 14648

Apr. 21, 2020

RICHARD VARNELL
HOLLY ENERGY PARTNERS
505 EAST HUNTLAND DRIVE, STE. 250
AUSTIN, TX 78752

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.

* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.

* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.

* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us.

Sincerely,

Claudia Guillen
(575)622-6521

Enclosure

explore

File No. L-14648 POD 1-4

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL

A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And/Or Recovery	☐ Ground Source Heat Pump
☐ Exploratory Well (Pump test)	☐ Construction Site/Public Works Dewatering	☐ Other(Describe):
☒ Monitoring Well	☐ Mine Dewatering	

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

☐ Temporary Request - Requested Start Date: Requested End Date:

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: Holly Energy Partners	Name:
Contact or Agent: check here if Agent ☒ Richard Varnell	Contact or Agent: check here if Agent ☐
Mailing Address: 505 East Huntland Drive, Ste. 250	Mailing Address:
City: Austin	City:
State: Zip Code: Texas 78752	State: Zip Code:
Phone: 512-297-3019 ☐ Home ☒ Cell Phone (Work): 512-626-3990	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): RVarnell@trccompanies.com	E-mail (optional):

OSE DII APR 1 2020 PM4:56

FOR OSE INTERNAL USE Application for Permit, Form WR-07, Rev 11/17/16

File No.: L-14648 Trn. No.: 671637 Receipt No.: 2-41879	
Trans Description (optional): MON	
Sub-Basin: L	PCW/LOG Due Date: 4/21/2021

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

■ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
MW-1 (POD 1, WTX to EMSU	-103.317770 W	32.584056 N	NE 1/4 of SE 1/4 of S11 T20S R36E
MW-2 (POD 3, WTX to EMSU	-103.317840 W	32.583777 N	SE 1/4 of SE 1/4 of S11 T20S R36E
MW-3 (POD 4, WTX to EMSU	-103.317635 W	32.583793 N	SE 1/4 of SE 1/4 of S11 T20S R36E
MW-4 (POD 2, WTX to EMSU	-103.317748 W	32.583926 N	SE 1/4 of SE 1/4 of S11 T20S R36E

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ■ No If yes, how many_____

Other description relating well to common landmarks, streets, or other:
Site is located at 32.583989, -103.317743, approximately 1 mile west of Maddox Road (Highway 41).

Well is on land owned by: Property owner - L&K Ranch, LLC

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ Yes ■ No
If yes, how many_____

Approximate depth of well (feet): 65 ft.	Outside diameter of well casing (inches): 2 in.
Driller Name: Talon LPE	Driller License Number: WD-1575

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

OSE DII APR 1 2020 PM4:56

RENEWING PERMIT FOR MW-1, MW-2, MW-3, and MW-4 (POD 1-4), PREVIOUSLY SUBMITTED FEBRUARY 25, 2019 AND APPROVED MARCH 18, 2019. *
FILE NO: L 14648; TRN NO: 640469

Site is WTX To EMSU Battery to Byrd Pump Crude Oil Release Site, 1RP-5154.

Monitoring for chlorides, BTEX, TDS, and TPH. All four wells will be installed following NMOSE regulations. Monitoring wells will be utilized for the extent of the project. Potential impacts to groundwater by the substances will be considered in regards to proper grouting of the well casing annual spaces and plugging and abandonment at completion of monitoring project.

Monitoring well locations will be reviewed for utilities and may be slightly adjusted based on field findings.

FOR OSE INTERNAL USE — Application for Permit, Form WR-07

File No.: L-14648	Trn No.: 671633

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
☐ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ■ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Ground Source Heat Pump:** ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Richard Varnell
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

OSE DII APR 1 2020 PM4:56

Richard Varnell
Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 21 day of April 20 20, for the State Engineer,

~~John R.~~ D'Antonio Jr., P.E., State Engineer

By: _____ _____
Signature Print

Title: Juan Hernandez, Water Resources Manager I
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: L-14648	Trn No.: 671633

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

17-1B Depth of the well shall not exceed the thickness of the Ogallala formation.

17-4 No water shall be appropriated and beneficially used under this permit.

17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.

17-7 The Permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

Trn Desc: L 14648 POD1-4

File Number: L 14648
Trn Number: 671633

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record.
The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

17-Q The State Engineer retains jurisdiction over this permit.

17-R Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

LOG The Point of Diversion L 14648 POD1 must be completed and the Well Log filed on or before 04/21/2021.

LOG The Point of Diversion L 14648 POD2 must be completed and the Well Log filed on or before 04/21/2021.

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

LOG The Point of Diversion L 14648 POD3 must be completed and the Well Log filed on or before 04/21/2021.

LOG The Point of Diversion L 14648 POD4 must be completed and the Well Log filed on or before 04/21/2021.

IT IS THE PERMITTEE'S RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 04/01/2020	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

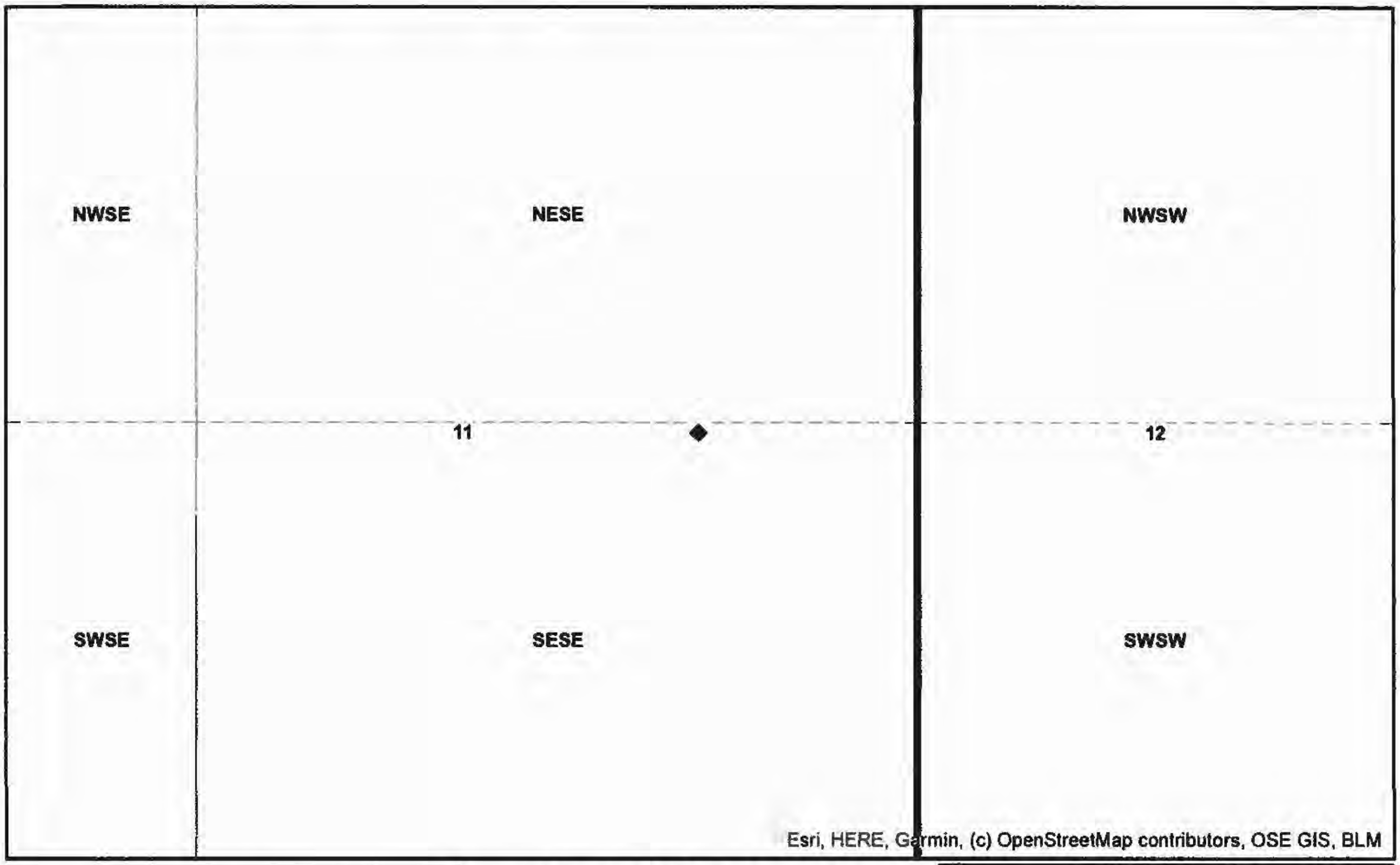
Witness my hand and seal this 21 day of Apr A.D., 2020

John R. D Antonio, Jr., P.E. , State Engineer

By: JUAN HERNANDEZ

Trn Desc: L 14648 POD1-4

File Number: L 14648
Trn Number: 671633



Coordinates

Decimal Degrees

Latitude 32.584056

Longitude -103.317770

State Plane - NAD 83 (f) - Zone E

Easting 854147.832

Northing 577701.386

Degrees Minutes Seconds

Latitude 32 : 35 : 2.601600

Longitude -103 : 19 : 3.972000

Location pulled from Coordinate Search

NEW MEXICO OFFICE OF THE STATE ENGINEER

1:4,514

ft: 0 90 180 360

N

GUILLEN 4/21/2020

Spatial Information

County: Lea

Groundwater Basin: Lea County

Abstract Area:L

Land Grant:
Not in Land Grant

Restrictions:

Lea County Critical Management Area

PLSS Description

NWNESESE Qtr of Sec 11 of 020S 036E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

Parcel Information

UPC/DocNum: 4000412520001

Parcel Owner: KLEIN, FAYE FAMILY TRUST

Address:

Legal:

POD Information

Owner: OLLY ENERGY PARTNERSHIP

File Number: L-14648 POD1

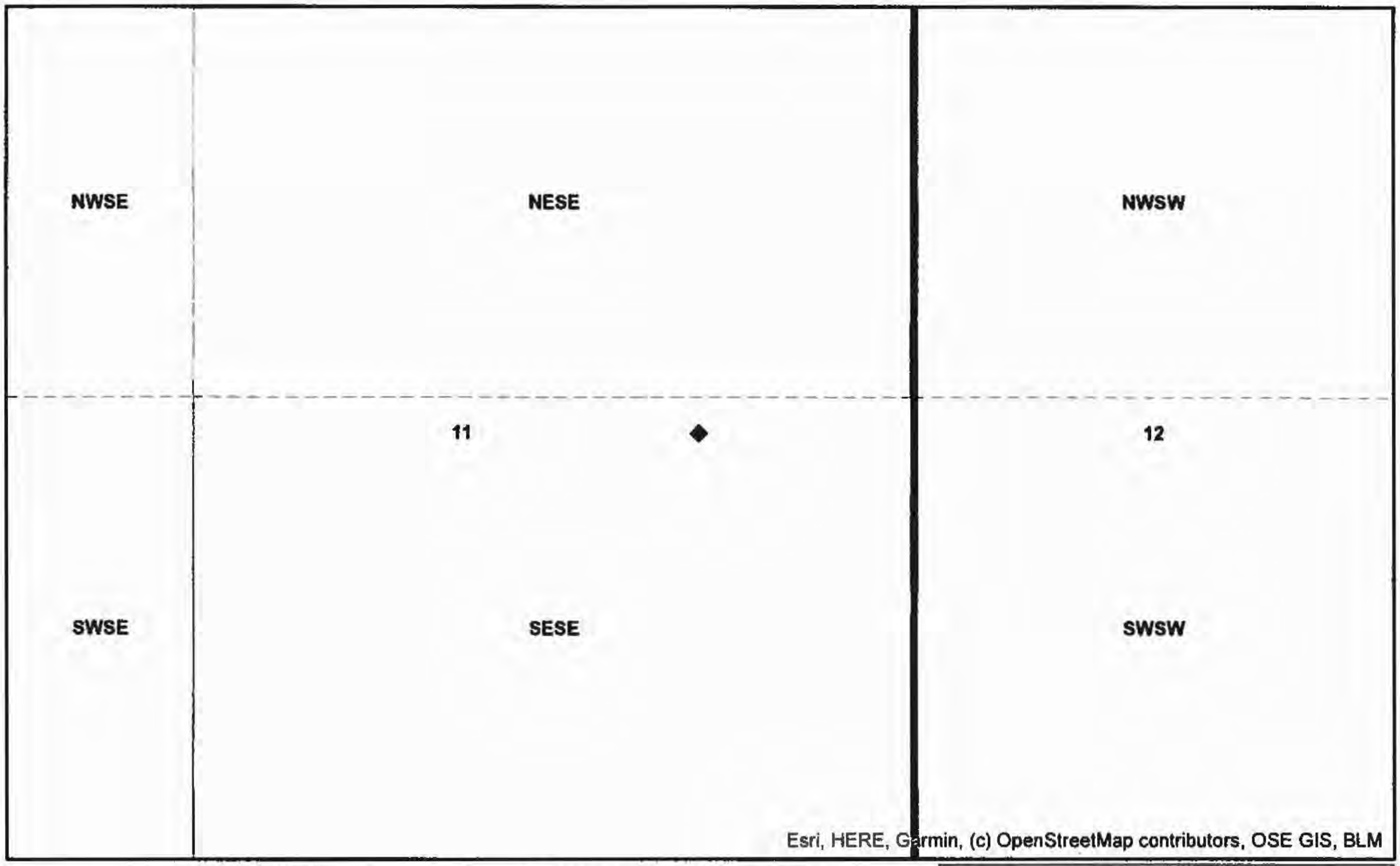
POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

- Coord Search Location
- Lea County Parcels 2018
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



Coordinates

Decimal Degrees

Latitude 32.583926

Longitude -103.317748

State Plane - NAD 83 (f) - Zone E

Easting 854155.060

Northing 577654.153

Degrees Minutes Seconds

Latitude 32 : 35 : 2.133600

Longitude -103 : 19 : 3.892800

Location pulled from Coordinate Search

NEW MEXICO OFFICE OF THE STATE ENGINEER

1:4,514

ft

0 90 180 360

N

GUILLEN 4/21/2020

Spatial Information

County: Lea

Groundwater Basin: Lea County

Abstract Area: L

Land Grant:
Not in Land Grant

Restrictions:

Lea County Critical Management Area

PLSS Description

NWNESESE Qtr of Sec 11 of 020S 036E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

Parcel Information

UPC/DocNum: 4000412520001

Parcel Owner: KLEIN, FAYE FAMILY TRUST

Address:

Legal:

POD Information

Owner: HOLLY ENERGY PARTNERSHIP

File Number: POD2

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

◆ Coord Search Location

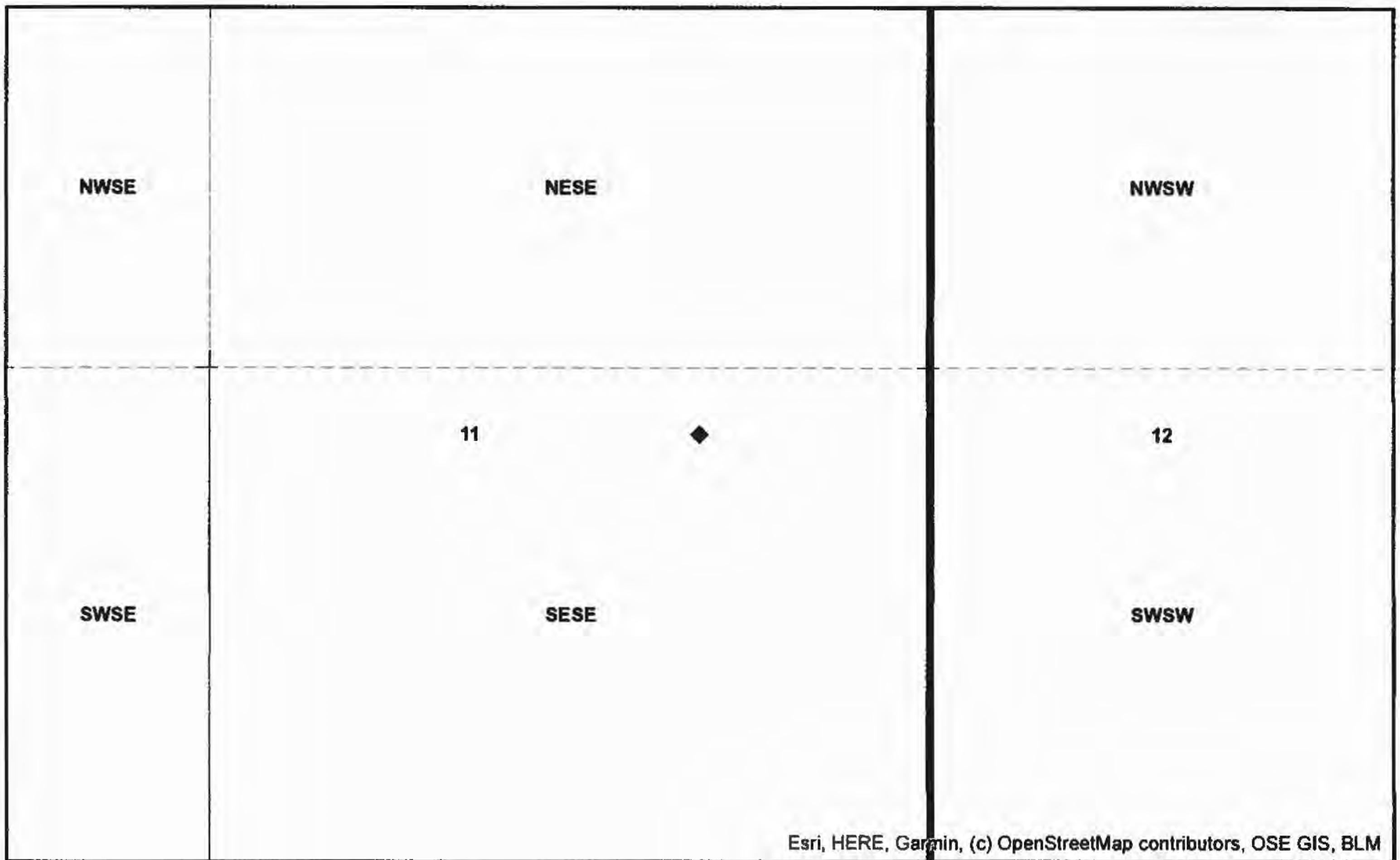
□ Lea County Parcels 2018

BLM Land Grant

□ PLSSTownship

□ PLSSFirstDiv...

PLSSSecond...



Coordinates

Decimal Degrees

Latitude 32.583777
Longitude -103.317840

State Plane - NAD 83 (f) - Zone E

Easting 854127.239
Northing 577599.673

Degrees Minutes Seconds

Latitude 32 : 35 : 1.597200
Longitude -103 : 19 : 4.224000

Location pulled from Coordinate Search

NEW MEXICO OFFICE OF THE STATE ENGINEER

1:4,514

ft
0 90 180 360

N

GUILLEN 4/21/2020

Spatial Information

County: Lea
Groundwater Basin: Lea County
Abstract Area: L

Land Grant:
Not in Land Grant

Restrictions:

Lea County Critical Management Area

PLSS Description

NWNESESE Qtr of Sec 11 of 020S 036E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

Parcel Information

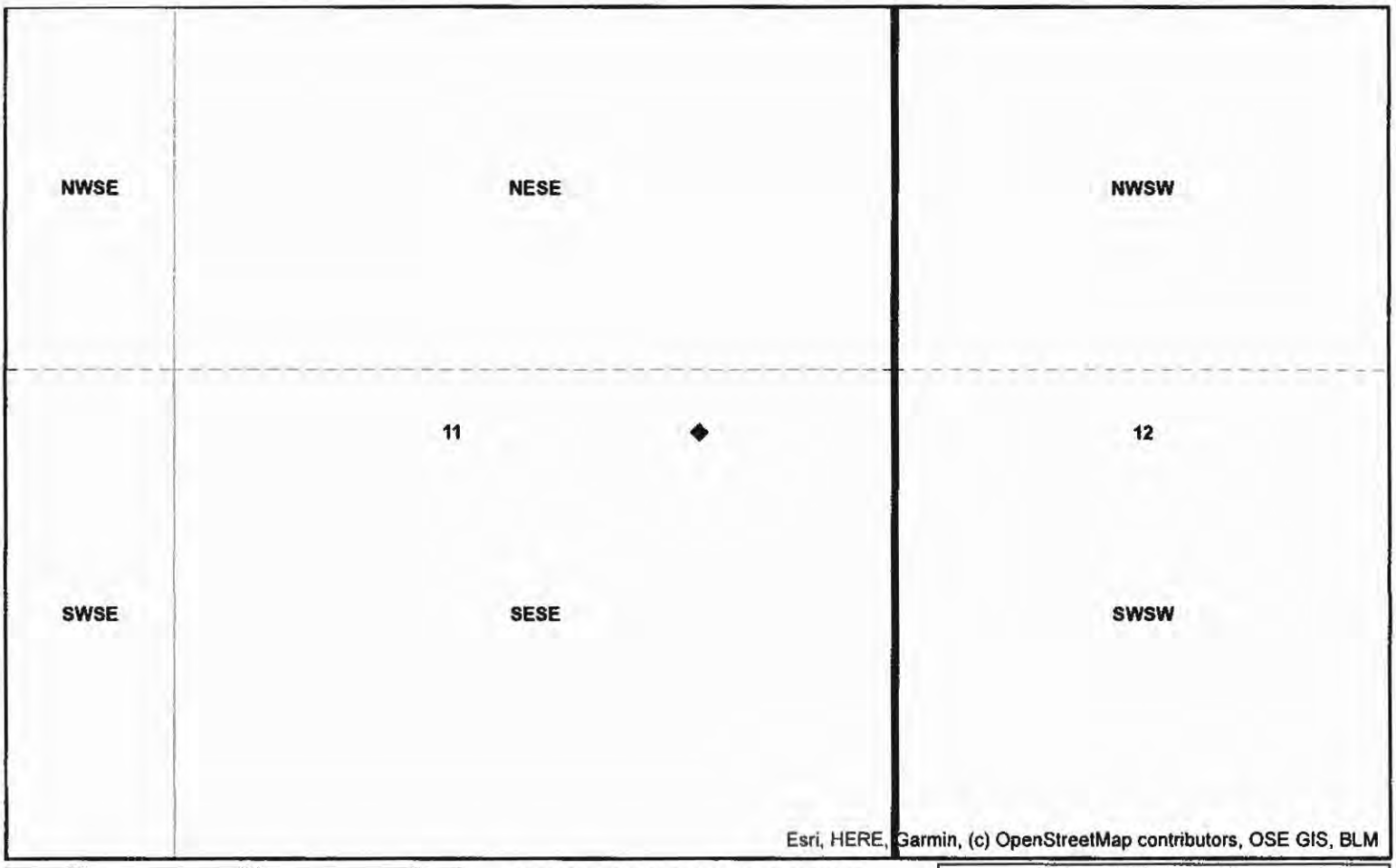
UPC/DocNum: 4000412520001
Parcel Owner: KLEIN, FAYE FAMILY TRUST
Address:

Legal:

POD Information

Owner: OLLY ENERGY PARTNERSHIP
File Number: POD3
POD Status: NoData
Permit Status: NoData
Permit Use: NoData
Purpose: MON

- Coord Search Location
- Lea County Parcels 2018
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...



Coordinates

Decimal Degrees

Latitude 32.583793

Longitude -103.317635

State Plane - NAD 83 (f) - Zone E

Easting 854190.330

Northing 577606.097

Degrees Minutes Seconds

Latitude 32 : 35 : 1.654800

Longitude -103 : 19 : 3.486000

Location pulled from Coordinate Search

NEW MEXICO OFFICE OF THE STATE ENGINEER

1:4,514

ft

0 90 180 360

N

GUILLEN 4/21/2020

Office of the State Engineer

Interstate Stream Commission

Spatial Information

County: Lea

Groundwater Basin: Lea County

Abstract Area: L

Land Grant:
Not in Land Grant

Restrictions:

Lea County Critical Management Area

PLSS Description

NWNESESE Qtr of Sec 11 of 020S 036E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

Parcel Information

UPC/DocNum: 4000412520001

Parcel Owner: KLEIN, FAYE FAMILY TRUST

Address:

Legal:

POD Information

Owner: OLLY ENERGY PARTNERSHIP

File Number: L-14648 POD4

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: MON

- Coord Search Location
- Lea County Parcels 2018
- BLM Land Grant
- PLSSTownship
- PLSSFirstDiv...
- PLSSSecond...

File No.

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL

A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And/Or Recovery	☐ Ground Source Heat Pump
☒ Exploratory Well (Pump test)	☐ Construction Site/Public Works Dewatering	☐ Other(Describe):
☐ Monitoring Well	☐ Mine Dewatering	

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

☐ Temporary Request - Requested Start Date: 10/04/2021 Requested End Date: 10/08/2021

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: Holly Energy Partners - Operating, L.P.	Name:
Contact or Agent: check here if Agent ☒ Richard Varnell	Contact or Agent: check here if Agent ☐
Mailing Address: 505 East Huntland Drive, Ste. 250	Mailing Address:
City: Austin	City:
State: Zip Code: Texas 78752	State: Zip Code:
Phone: 512-297-3019 ☐ Home ☒ Cell Phone (Work):	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): rvarnell@trccompanies.com	E-mail (optional):

FOR OSE INTERNAL USE Application for Permit, Form WR-07, Rev 11/17/16

File No.:	Trn. No.:	Receipt No.:
Trans Description (optional):		
Sub-Basin:	PCW/LOG Due Date:	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

■ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range)* OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
SB-29	-103.317266	32.584063	
SB-30	-103.317157	32.583925	

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ■ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:
SITE IS LOCATED AT 32.584063, -103.317266 APPROXIMATELY 1 MILE WEST OF MADDOX ROAD (HIGHWAY 41)

Well is on land owned by: L&K RANCH, LLC

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ Yes ■ No
If yes, how many_____

Approximate depth of well (feet): 35	Outside diameter of well casing (inches): N/A
Driller Name: TALON LPE	Driller License Number: WD-1800

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

SITE IS WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE SITE, NMOCD INCIDENT # NOY1822242858
LINKED TO WELL PERMIT APPLICATION L-14648

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☒ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☐ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Ground Source Heat Pump:** ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Brent Eberhard
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☐ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this _____ day of _____ 20 _____ , for the State Engineer,

_____, State Engineer

By: _____ _____
Signature Print

Title: _____
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.:	Trn No.:

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: SB-29

Name of well owner: L&K RANCH, LLC

Mailing address: 6800 W CARLSBAD County: LEA

City: HOBBS State: NEW MEXICO Zip code: 88240

Phone number: _____ E-mail: _____

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: JAROD MICHALSKY; TALON LPE, LTD

New Mexico Well Driller License No.: WD-1800 Expiration Date: 08/17/2022

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 35 min, 02.6 sec
Longitude: 103 deg, 19 min, 02.2 sec, NAD 83

2) Reason(s) for plugging well(s):

SOIL BORING FOR SOIL SAMPLING

3) Was well used for any type of monitoring program? N/A If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? N/A If yes, provide additional detail, including analytical results and/or laboratory report(s):

5) Static water level: UNKNOWN feet below land surface / feet above land surface (circle one)

6) Depth of the well: 35 feet

7) Inside diameter of innermost casing: N/A inches.

8) Casing material: N/A

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

☐ a well screen or perforated pipe, state the screened interval(s): _____

10) What annular interval surrounding the artesian casing of this well is cement-grouted? N/A

11) Was the well built with surface casing? N/A If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe:

12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING: ☐

If plugging method differs between multiple wells on same site, a separate form must be completed for each method.

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

PRESSURE FILL BENTONITE GROUT VIA TREMMIE PIPE TO BOTTOM OF WELL SURFACE

2) Will well head be cut-off below land surface after plugging? N/A

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 50-55 Gallons

4) Type of Cement proposed: TYPE I/II PORTLAND CEMENT

5) Proposed cement grout mix: 7.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

6% BENTONITE

8) Additional notes and calculations:

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

VIII. SIGNATURE:

I, Brent Eberhard, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Signature of Applicant — Date: 9/17/2021

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

_____ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this _____ day of _____, _____

John R. D'Antonio Jr. P.E., New Mexico State Engineer

By: _____

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			
Bottom of proposed interval of grout placement (ft bgl)			
Theoretical volume of grout required per interval (gallons)			
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			
Mixed on-site or batch-mixed and delivered?			
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: SB-30

Name of well owner: L&K RANCH, LLC

Mailing address: 6800 W CARLSBAD County: LEA

City: HOBBS State: NEW MEXICO Zip code: 88240

Phone number: _____ E-mail: _____

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: JAROD MICHALSKY; TALON LPE, LTD

New Mexico Well Driller License No.: WD-1800 Expiration Date: 08/17/2022

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 35 min, 02.1 sec
Longitude: 103 deg, 19 min, 01.8 sec, NAD 83

2) Reason(s) for plugging well(s):

SOIL BORING FOR SOIL SAMPLING

3) Was well used for any type of monitoring program? N/A If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? N/A If yes, provide additional detail, including analytical results and/or laboratory report(s):

5) Static water level: UNKNOWN feet below land surface / feet above land surface (circle one)

6) Depth of the well: 35 feet

7) Inside diameter of innermost casing: N/A inches.

8) Casing material: N/A

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

☐ a well screen or perforated pipe, state the screened interval(s): _____

10) What annular interval surrounding the artesian casing of this well is cement-grouted? N/A

11) Was the well built with surface casing? N/A If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe:

12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

PRESSURE FILL BENTONITE GROUT VIA TREMMIE PIPE TO BOTTOM OF WELL SURFACE

2) Will well head be cut-off below land surface after plugging? N/A

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 50-55 Gallons

4) Type of Cement proposed: TYPE I/II PORTLAND CEMENT

5) Proposed cement grout mix: 7.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

6% BENTONITE

8) Additional notes and calculations:

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

VIII. SIGNATURE:

I, Brent Eberhard, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Signature of Applicant — Date: 09/17/2021

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

_____ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this _____ day of _____, _____

John R. D'Antonio Jr. P.E., New Mexico State Engineer

By: _____

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			
Bottom of proposed interval of grout placement (ft bgl)			
Theoretical volume of grout required per interval (gallons)			
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			
Mixed on-site or batch-mixed and delivered?			
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 708534
File Nbr: L 14648 POD6,7

Sep. 27, 2021

RICHARD VARNELL
HOLLY ENERGY PARTNERS OP LP
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TX 78752

Greetings:

Your approved copy of the above numbered permit to drill a well for non-consumptive purposes is enclosed. You must obtain an additional permit if you intend to use the water. It is your responsibility to provide the contracted well driller with a copy of the permit that must be made available during well drilling activities.

Carefully review the attached conditions of approval for all specific permit requirements.

* If use of this well is temporary in nature and the well will be plugged at the end of the well usage, the OSE must initially approve of the plugging. If plugging approval is not conditioned in this permit, the applicant must submit a Plugging Plan of Operations for approval prior to the well being plugged. The Plugging Record must be properly completed and submitted to the OSE within 30 days of the well plugging.

* If the final intended purpose and condition requires a well ID tag and meter installation, the applicant must immediately send a completed meter report form to this office.

* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole.

* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us.

Sincerely,

KASHYAP PAREKH
(575)622-6521

Enclosure

explore

File No. L-14648 POD6,7

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐	Pollution Control And/Or Recovery	☐	Ground Source Heat Pump	
☒ Exploratory Well (Pump test)	☐	Construction Site/Public Works Dewatering	☐	Other(Describe):	
☐ Monitoring Well	☐	Mine Dewatering			

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

☐ Temporary Request - Requested Start Date: 10/04/2021 Requested End Date: 10/08/2021

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

1. APPLICANT(S)

Name: Holly Energy Partners - Operating, L.P.	Name:
Contact or Agent: check here if Agent ☒ Richard Varnell	Contact or Agent: check here if Agent ☐
Mailing Address: 505 East Huntland Drive, Ste. 250	Mailing Address:
City: Austin	City:
State: Texas Zip Code: 78752	State: Zip Code:
Phone: 512-297-3019 ☐ Home ☒ Cell Phone (Work):	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): rvarnell@trccompanies.com	E-mail (optional):

OSE DII SEP 23 2021 AM11:46

FOR OSE INTERNAL USE Application for Permit, Form WR-07, Rev 11/17/16

File No.: L-14648	Trn. No.: 705534	Receipt No.: 2-43826
Trans Description (optional): POD6,7		
Sub-Basin: L	PCW/LOG Due Date: 9-27-22	

2. WELL(S) Describe the well(s) applicable to this application.

Location **Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).**
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves, Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
L-14648 SB-29 POD 6	-103.317266	32.584063	
L-14648 SB-30 POD 7	-103.317157	32.583925	

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**_____

Other description relating well to common landmarks, streets, or other:
SITE IS LOCATED AT 32.584063, -103.317266 APPROXIMATELY 1 MILE WEST OF MADDOX ROAD (HIGHWAY 41)

Well is on land owned by: L&K RANCH, LLC

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☐ Yes ☒ No
If yes, how many_____

Approximate depth of well (feet): 35	Outside diameter of well casing (inches): N/A
Driller Name: TALON LPE	Driller License Number: WD-1800

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

SITE IS WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE SITE, NMOCD INCIDENT # NOY1822242858
LINKED TO WELL PERMIT APPLICATION L-14648

OSE DII SEP 23 2021 AM11:46

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: L-14648	Trn No.: 705534

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
■ Include a description of any proposed pump test, if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☐ Include the reason for the monitoring well, and, ☐ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Ground Source Heat Pump:** ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Richard Varnell
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Richard Varnell
Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☒ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this 27 day of September 20 21, for the State Engineer,

John R. D'Antonio, Jr., P.E., State Engineer

By: K. Parekh
Signature

Print

Title: Kashyap Parekh, Water Resources Professional III
Print

FOR OSE INTERNAL USE

Application for Permit, Form WR-07

File No.: L-14648	Trn No.: 708534

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

17-16 Construction of a water well by anyone without a valid New Mexico Well Driller License is illegal, and the landowner shall bear the cost of plugging the well by a licensed New Mexico well driller. This does not apply to driven wells, the casing of which does not exceed two and three-eighths inches outside diameter.

17-1B Depth of the well shall not exceed the thickness of the Ogallala formation.

17-4 No water shall be appropriated and beneficially used under this permit.

17-6 The well authorized by this permit shall be plugged completely using the following method per Rules and Regulations Governing Well Driller Licensing, Construction, Repair and Plugging of Wells; Subsection C of 19.27.4.30 NMAC unless an alternative plugging method is proposed by the well owner and approved by the State Engineer upon completion of the permitted use. All pumping appurtenance shall be removed from the well prior to plugging. To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. The well driller shall cut the casing off at least four (4) feet below ground surface and fill the open hole with at least two vertical feet of approved sealant. The driller must fill or cover any open annulus with sealant. Once the sealant has cured, the well driller or well owner may cover the seal with soil. A Plugging Report for said well shall be filed with the Office of the State Engineer in a District Office within 30 days of completion of the plugging.

Trn Desc: L 14648 POD6,7

File Number: L 14648
Trn Number: 708534

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

LOG The Point of Diversion L 14648 POD6 must be completed and the Well Log filed on or before 09/27/2022.

LOG The Point of Diversion L 14648 POD7 must be completed and the Well Log filed on or before 09/27/2022.

IT IS THE PERMITTEES RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

SHOULD THE PERMITTEE CHANGE THE PURPOSE OF USE TO OTHER THAN EXPLORATORY PURPOSES, AN APPLICATION SHALL BE ACQUIRED FROM THE OFFICE OF THE STATE ENGINEER.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd: Date Rcvd. Corrected:
Formal Application Rcvd: 09/23/2021 Pub. of Notice Ordered:
Date Returned - Correction: Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

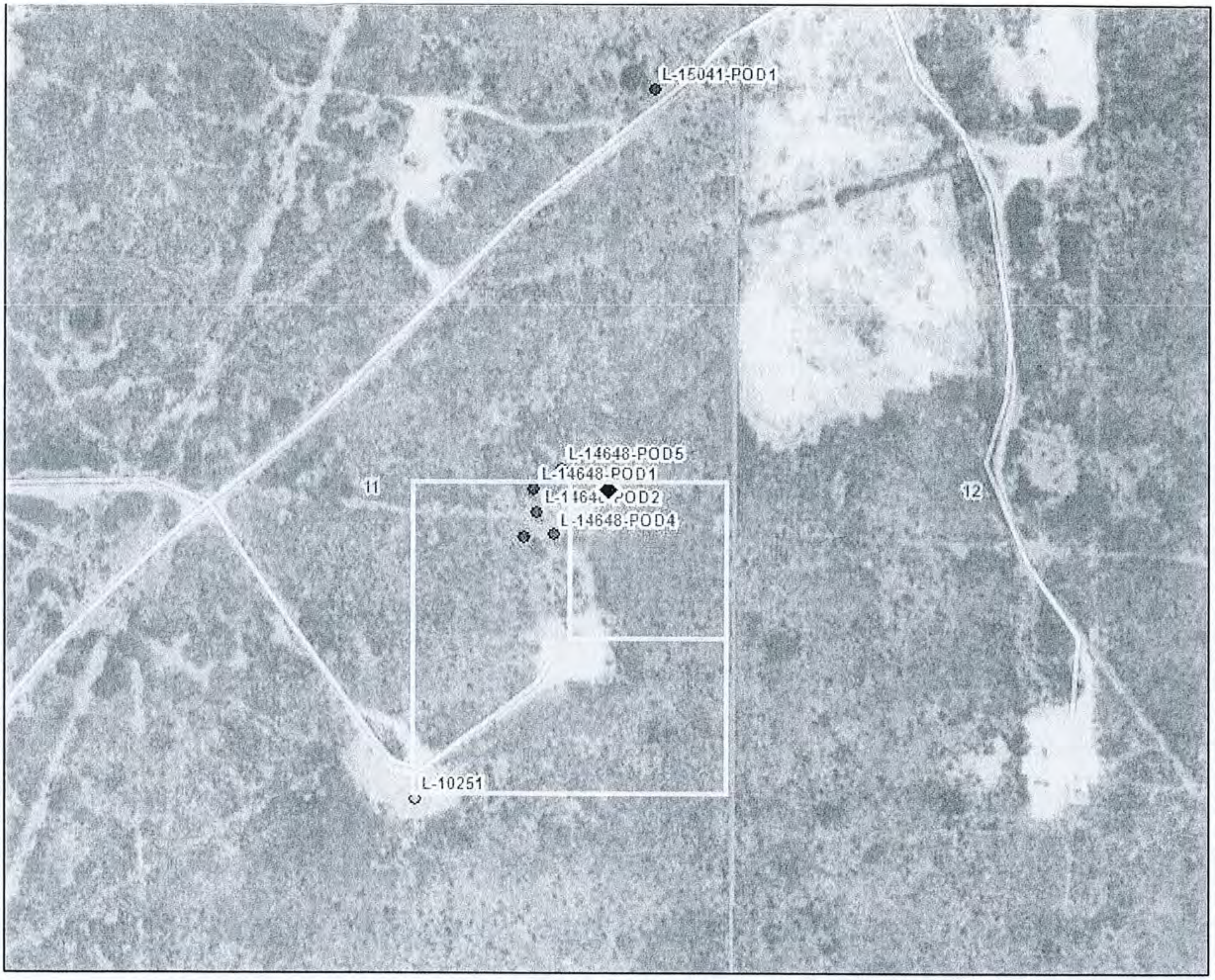
Witness my hand and seal this 27 day of Sep A.D., 2021

John R. D Antonio, Jr., P.E. , State Engineer

By: K. Parekh
KASHYAP PAREKH

Trn Desc: L 14648 POD6,7

File Number: L 14648
Trn Number: 708534



NEW MEXICO OFFICE
OF THE
STATE ENGINEER

Coordinates

UTM - NAD 83 (m) - Zone 13

Easting **657937.891**

Northing **3606426.295**

State Plane - NAD 83 (f) - Zone E

Easting **854303.054**

Northing **577705.415**

Degrees Minutes Seconds

Latitude **32 : 35 : 2.626800**

Longitude **-103 : 19 : 2.157600**

Location pulled from Coordinate Search

N

1:4,514

ft

0 90 180 360

Image Info
Source: Maxar
Date: 9/25/2020
Resolution (m):0.5
Accuracy (m): 5

Spatial Information

OSE Administrative Area: Lea
County: Lea
Groundwater Basin: Lea County
Abstract Area:Lea County

Sub-Basin: Landreth-Monumnet Draws

Land Grant: Not in Land Grant
Restrictions:
Lea County Critical Management Area

PLSS Description
NENESESE Qtr of Sec 11 of 020S 036E

Calculated PLSS

Coord Search Location

GIS WATERS PODs

Unknown

Active

Pending

Water Right Regulations

Critical Management Area - Guidelines

Closure Area

OSE District Boundary

New Mexico State Trust Lands

Subsurface Estate

Surface Estate

Both Estates

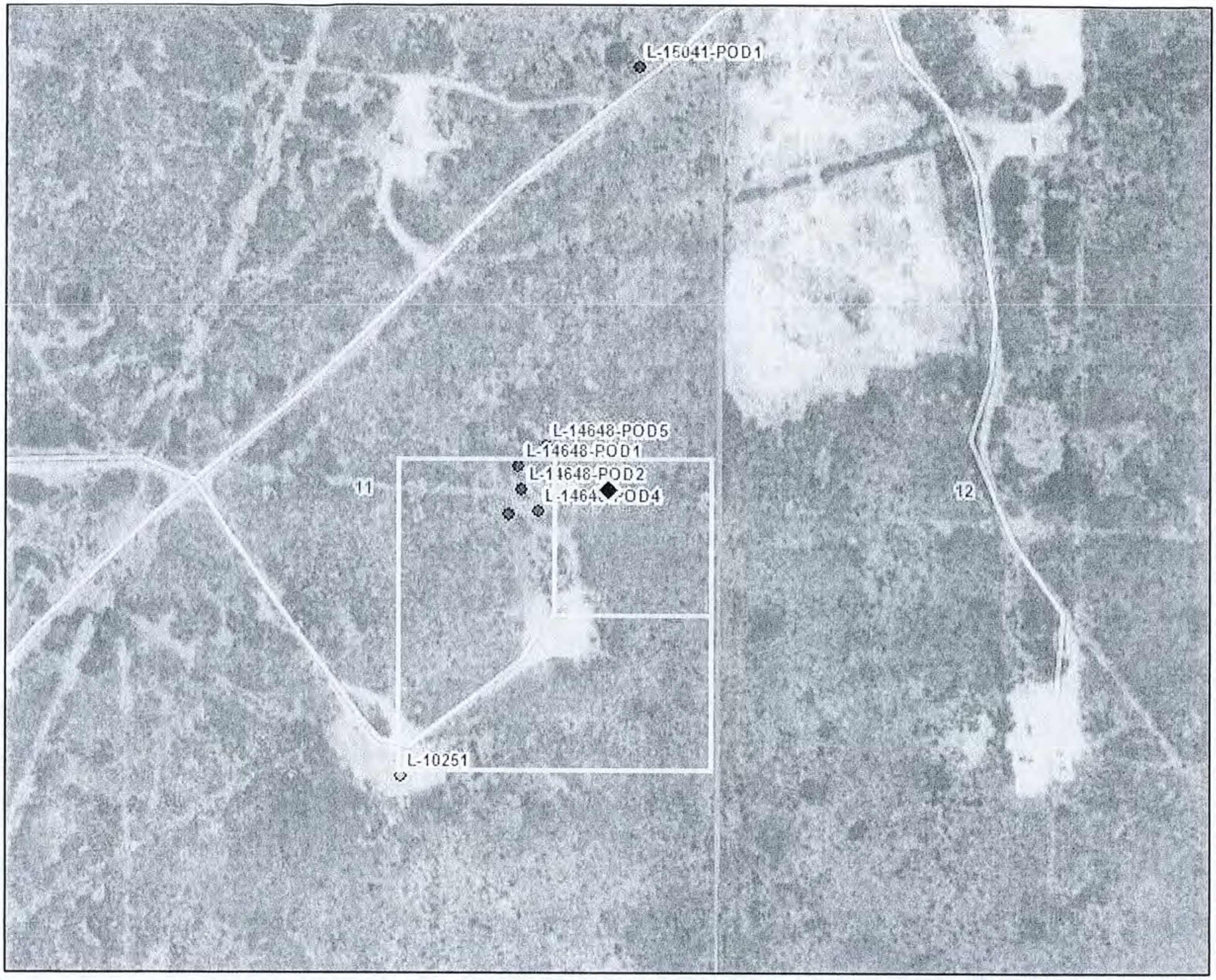
SiteBoundaries

Sections

POD Information

Owner:
File Number: L-14648 POD6
POD Status: NoData
Permit Status: NoData
Permit Use: NoData
Purpose:

9/27/20



NEW MEXICO OFFICE OF THE STATE ENGINEER

Coordinates

UTM - NAD 83 (m) - Zone 13

Easting **657948.365**

Northing **3606411.156**

State Plane - NAD 83 (f) - Zone E

Easting **854337.108**

Northing **577655.528**

Degrees Minutes Seconds

Latitude **32 : 35 : 2.130000**

Longitude **-103 : 19 : 1.765200**

Location pulled from Coordinate Search

N

1:4,514

ft 0 90 180 360

Office of the State Engineer
Interstate Stream Commission

Image Info
Source: Maxar
Date: 9/25/2020
Resolution (m):0.5
Accuracy (m): 5

Spatial Information

OSE Administrative Area: Lea
County: Lea
Groundwater Basin: Lea County
Abstract Area:Lea County

Sub-Basin: Landreth-Monumnet Draws

Land Grant: Not in Land Grant
Restrictions:
Lea County Critical Management Area

PLSS Description
NENESESE Qtr of Sec 11 of 020S 036E

Calculated PLSS

◆ Coord Search Location

GIS WATERS PODs

○ Unknown

● Active

○ Pending

Water Right Regulations

Critical Management Area - Guidelines

Closure Area

OSE District Boundary

New Mexico State Trust Lands

Subsurface Estate

Surface Estate

Both Estates

Site Boundaries

Sections

POD Information

Owner:
File Number: L-14648POD7
POD Status: NoData
Permit Status: NoData
Permit Use: NoData
Purpose:

9/27/20

OFFICE OF THE STATE ENGINEER/INTERSTATE STREAM COMMISSION – ROSWELL OFFICE

OFFICIAL RECEIPT NUMBER: 2 - 43826 DATE: 9-23-21 FILE NO.: NCW 160145

TOTAL: 10.00 RECEIVED: Ten DOLLARS CHECK NO.: 1051 CASH: _____

PAYOR: Talon/LPE ADDRESS: 921 N Bivins St CITY: Amarillo STATE: Tx

ZIP: 79107 RECEIVED BY: YM

INSTRUCTIONS: Indicate the number of actions to the left of the appropriate type of filing. Complete the receipt information. **Original** to payor; **pink** copy to Program Support/ASD; and **yellow** copy for Water Rights. If a mistake is made, void the original and all copies and submit to Program Support/ASD as part of your daily deposit.

A. Ground Water Filing Fees

___	1. Change of Ownership of Water Right	$ 2.00
___	2. Application to Appropriate or Supplement Domestic 72-12-1 Well	$ 125.00
___	3. Application to Repair or Deepen 72-12-1 Well	$ 75.00
___	4. Application for Replacement 72-12-1 Well	$ 75.00
___	5. Application to Change Purpose of Use 72-12-1 Well	$ 75.00
___	6. Application for Stock Well/Temp. Use	$ 5.00
___	7. Application to Appropriate Irrigation, Municipal, or Commercial Use	$ 25.00
___	8. Declaration of Water Right	$ 1.00
___	9. Application for Additional Point of Diversion Non 72-12-1 Per Well	$ 25.00
___	10. Application to Change Place or Purpose of Use Non 72-12-1 Well	$ 25.00
___	11. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Ground Water	$ 50.00
___	12. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Ground Water	$ 50.00
___	13. Application to Change Point of Diversion of Non 72-12-1 Well	$ 25.00
___	14. Application to Repair or Deepen Non 72-12-1 Well	$ 5.00
2 Y	15. Application for Test, Expl. Observ. Well	$ 5.00
___	16. Application for Extension of Time	$ 25.00
___	17. Proof of Application to Beneficial Use	$ 25.00
___	18. Notice of Intent to Appropriate	$ 25.00

B. Surface Water Filing Fees

___	1. Change of Ownership of a Water Right	$ 5.00
___	2. Declaration of Water Right	$ 10.00
___	3. Amended Declaration	$ 25.00
___	4. Application to Change Point of Diversion and Place and/or Purpose of Use from Surface Water to Surface Water	$ 200.00
___	5. Application to Change Point of Diversion and Place and/or Purpose of Use from Ground Water to Surface Water	$ 200.00
___	6. Application to Change Point of Diversion	$ 100.00
___	7. Application to Change Place and/or Purpose of Use	$ 100.00
___	8. Application to Appropriate	$ 25.00
___	9. Notice of Intent to Appropriate	$ 25.00
___	10. Application for Extension of Time	$ 50.00
___	11. Supplemental Well to a Surface Right	$ 100.00
___	12. Return Flow Credit	$ 100.00
___	13. Proof of Completion of Works	$ 25.00
___	14. Proof of Application of Water to Beneficial Use	$ 25.00
___	15. Water Development Plan	$ 100.00
___	16. Declaration of Livestock Water Impoundment	$ 10.00
___	17. Application for Livestock Water Impoundment	$ 10.00

All fees are non-refundable.

C. Well Driller Fees

___	1. Application for Well Driller's License	$ 50.00
___	2. Application for Renewal of Well Driller's License	$ 50.00
___	3. Application to Amend Well Driller's License	$ 50.00

D. Reproduction of Documents

___ @ 0.25¢ $_____

___ Map(s) @ $3.00 $_____

E. Certification $_____

F. Other $_____

G. Comments:

Mail

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

John R. D'Antonio Jr., P.E.
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

September 27, 2021

L & K Ranch LLC
6800 W. Carlsbad
Hobbs, New Mexico 88240

RE: Well Plugging Plan of Operations for **L-14648-POD6 and L-14648-POD7**

Greetings:

Enclosed is your copy of the Well Plugging Plan of Operations for the above referenced project. The proposed method of operation is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted June 30, 2017 by the State Engineer.

Plugging operations shall also be conducted in accordance with NMED, NMOCD, or other State or Federal agencies having oversight for the above described project.

Within 30 days after the well is plugged, the well driller is required to file a complete plugging record with the OSE and the permit holder.

Sincerely,

K. Parekh

Kashyap Parekh
Water Resources Professional III

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: ~~SB-29~~ L-14648-POD6

Name of well owner: L&K RANCH, LLC

Mailing address: 6800 W CARLSBAD County: LEA

City: HOBBS State: NEW MEXICO Zip code: 88240

Phone number: _____ E-mail: _____

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: JAROD MICHALSKY; TALON LPE, LTD

New Mexico Well Driller License No.: WD-1800 Expiration Date: 08/17/2022

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 35 min, 02.6 sec
Longitude: 103 deg, 19 min, 02.2 sec, NAD 83

2) Reason(s) for plugging well(s):

SOIL BORING FOR SOIL SAMPLING

OSE DII SEP 23 2022 AM 11:26

3) Was well used for any type of monitoring program? N/A If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? N/A If yes, provide additional detail, including analytical results and/or laboratory report(s):

5) Static water level: UNKNOWN feet below land surface / feet above land surface (circle one)

6) Depth of the well: 35 feet

7) Inside diameter of innermost casing: N/A inches.

8) Casing material: N/A

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

☐ a well screen or perforated pipe, state the screened interval(s): _____

10) What annular interval surrounding the artesian casing of this well is cement-grouted? N/A

11) Was the well built with surface casing? N/A If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe:

12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

PRESSURE FILL BENTONITE GROUT VIA TREMMIE PIPE TO BOTTOM OF WELL SURFACE

2) Will well head be cut-off below land surface after plugging? N/A

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 50-55 Gallons

4) Type of Cement proposed: TYPE I/II PORTLAND CEMENT

5) Proposed cement grout mix: 7.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

OSE DII SEP 23 2021 AM11:47

7) Grout additives requested, and percent by dry weight relative to cement:

6% BENTONITE

8) Additional notes and calculations:

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

VIII. SIGNATURE:

I, Brent Eberhard, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Signature of Applicant — Date: 9/17/2021

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

OSE DII SEP 23 2021 AM11:47

X Approved subject to the attached conditions.

_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 27th day of SEPTEMBER 2021

John R. D'Antonio Jr. P.E., New Mexico State Engineer

By: K. Parekh

KASHYAP PAREKH

W.R.P. III

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			
Bottom of proposed interval of grout placement (ft bgl)			
Theoretical volume of grout required per interval (gallons)			
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			
Mixed on-site or batch-mixed and delivered?			
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested		OSE DII SEP 23 2021 AM11:47	
Additive 2 percent by dry weight relative to cement			

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

John R. D'Antonio Jr., P.E.
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

September 27, 2021

L & K Ranch LLC
6800 W. Carlsbad
Hobbs, New Mexico 88240

RE: Well Plugging Plan of Operations for **L-14648-POD6 and L-14648-POD7**

Greetings:

Enclosed is your copy of the Well Plugging Plan of Operations for the above referenced project. The proposed method of operation is found to be acceptable and in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted June 30, 2017 by the State Engineer.

Plugging operations shall also be conducted in accordance with NMED, NMOCD, or other State or Federal agencies having oversight for the above described project.

Within 30 days after the well is plugged, the well driller is required to file a complete plugging record with the OSE and the permit holder.

Sincerely,

K. Parekh

Kashyap Parekh
Water Resources Professional III

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: ~~SB-30~~ L-14648-POD7

Name of well owner: L&K RANCH, LLC

Mailing address: 6800 W CARLSBAD County: LEA

City: HOBBS State: NEW MEXICO Zip code: 88240

Phone number: _____ E-mail: _____

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: JAROD MICHALSKY; TALON LPE, LTD

New Mexico Well Driller License No.: WD-1800 Expiration Date: 08/17/2022

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 35 min, 02.1 sec
Longitude: 103 deg, 19 min, 01.8 sec, NAD 83

2) Reason(s) for plugging well(s):

SOIL BORING FOR SOIL SAMPLING

OSE DII SEP 23 2021 AM 11:43

3) Was well used for any type of monitoring program? N/A If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? N/A If yes, provide additional detail, including analytical results and/or laboratory report(s):

5) Static water level: UNKNOWN feet below land surface / feet above land surface (circle one)

6) Depth of the well: 35 feet

7) Inside diameter of innermost casing: N/A inches.

8) Casing material: N/A

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

☐ a well screen or perforated pipe, state the screened interval(s): _____

10) What annular interval surrounding the artesian casing of this well is cement-grouted? N/A

11) Was the well built with surface casing? N/A If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe:

12) Has all pumping equipment and associated piping been removed from the well? N/A If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

PRESSURE FILL BENTONITE GROUT VIA TREMMIE PIPE TO BOTTOM OF WELL SURFACE

2) Will well head be cut-off below land surface after plugging? N/A

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 50-55 Gallons

4) Type of Cement proposed: TYPE I/II PORTLAND CEMENT

5) Proposed cement grout mix: 7.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

OSE DII SEP 23 2021 AM11:48

7) Grout additives requested, and percent by dry weight relative to cement:

6% BENTONITE

8) Additional notes and calculations:

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

VIII. SIGNATURE:

I, Brent Eberhard, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

Signature of Applicant — Date: 09/17/2021

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

X Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

DGE OUT SEP 23 2021 AM11:43

Witness my hand and official seal this 27th day of SEPTEMBER, 2021

John R. D'Antonio Jr. P.E., New Mexico State Engineer

By: K. Parekh
KASHYAP PAREKH
W.R.P. III

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			
Bottom of proposed interval of grout placement (ft bgl)			
Theoretical volume of grout required per interval (gallons)			
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			
Mixed on-site or batch-mixed and delivered?			
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested		OSE DI SEP 23 2021 AM11:43	
Additive 2 percent by dry weight relative to cement			

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

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
	L 10251		4	4	11	20S	36E	657817	3606224*

Driller License: **Driller Company:**

Driller Name:

Drill Start Date: **Drill Finish Date:** **Plug Date:**

Log File Date: **PCW Rcv Date:** **Source:**

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

Casing Size: **Depth Well:** **Depth Water:**

***UTM location was derived from PLSS - see Help**

L-10,251

Revised December 1975

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

Declaration of Owner of Underground Water Right

Lea County Underground Water Basin
BASIN NAME

Declaration No. L-10,251 Date received April 22, 1992

STATEMENT

1. Name of Declarant Faye L. Klein
   Mailing Address Box 1503 Hobbs
   County of Lea, 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 SE ¼ SE ¼ of Sec. 11 Twp. 20 S Rge. 36 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 unknown driller unknown depth 22' feet. outside diameter of casing 7¼ inches; original capacity ____ gal. per min.; present capacity ____ gal. per min.; pumping lift ____ feet; static water level 55-60' feet (above) (below) land surface; make and type of pump Aeromotor windmill
   make, type, horsepower, etc., of power plant ____
   Fractitional or percentage interest claimed in well 100 0/0
5. Quantity of water appropriated and beneficially used 3 acre feet (acre feet per acre) (acre feet per annum) for domestic, livestock purposes.
6. Acreage actually irrigated ____ acres, located and described as follows (describe only lands actually irrigated):

Subdivision	Sec.	Twp.	Range	Acres Irrigated	Owner

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

7. Water was first applied to beneficial use PRIOR TO 1931 before the basin was created (month / day / 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: ____

'92 APR 22 AM 8 31
STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO

8. Additional statements or explanations ____

I, Faye L. Klein 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.

Klein Ranch, declarant.
by: Faye L. Klein

Subscribed and sworn to before me this 21st day of April, A.D. 1992

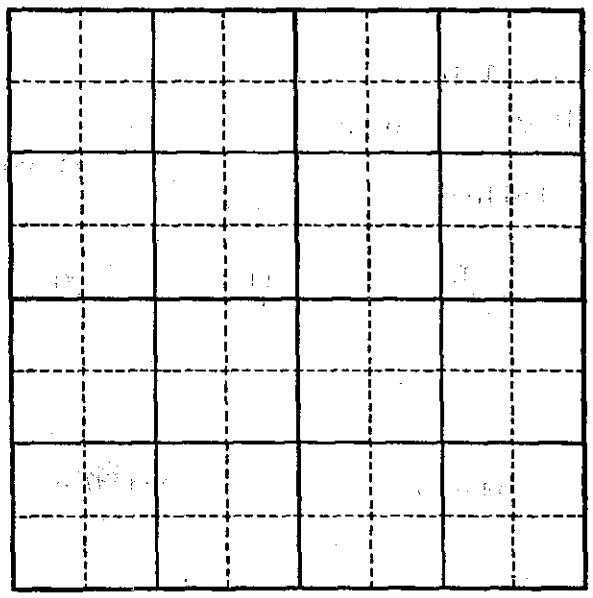
My commission expires August 19, 1993 Delma R. Madrid Notary Public

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.

L 11315

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.

'92 MAY 4 AM 10 18

STATE ENGINEER OFFICE
SANTA FE, NEW MEXICO

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

ELUID MARTINEZ
STATE ENGINEER

ROSWELL

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
(505) 622-6521

April 30, 1992

Files: L-10,245; L-10,246; L-10,247; L-10,248;
L-10,249; L-10,250; L-10,251; L-10,252

Faye L. Klein
P. O. Box 1503
Hobbs, NM 88240

Dear Ms. Klein:

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 these numbers 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,

Johnny R. Hernandez
Lea County Basin Supervisor

JRH/fh
Encls.

cc: Santa Fe

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
20D32	L 15041 POD1	2	2	4	11	20S	36E	657963	3606685

Driller License: 1626 **Driller Company:** TAYLOR, ROY ALLEN

Driller Name: ROY TAYLOR

Drill Start Date: 12/01/2020 **Drill Finish Date:** 12/01/2020 **Plug Date:**

Log File Date: 12/10/2020 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 13 GPM

Casing Size: 5.90 **Depth Well:** 63 feet **Depth Water:** 42 feet

Water Bearing Stratifications:	Top	Bottom	Description
	30	43	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	23	63

File No. L-15041

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS IN ACCORDANCE WITH SECTIONS 72-12-1.1, 72-12-1.2, OR 72-12-1.3 NEW MEXICO STATUTES

For fees, see State Engineer website: http://www.ose.state.nm.us/

1. APPLICANT(S)

Name: L&K Ranch LLC	Name:
Contact or Agent: check here if Agent ■ Chris Cortez (Atkins Engineering Associates, Inc)	Contact or Agent: check here if Agent ☐
Mailing Address: 2904 W 2nd St	Mailing Address:
City: Roswell	City:
State: Zip Code: NM 88201	State: Zip Code:
Phone: ☐ Home ☐ Cell Phone (Work): 575.624.2420	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): chris@atkinseng.com	E-mail (optional):

☐ Check here if existing well. Enter OSE File No. _____

2. WELL LOCATION Required: Coordinate location must be New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84). District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

NM State Plane (NAD83) - In feet	NM West Zone ☐ NM Central Zone ☐ NM East Zone ☐	X (in feet): Y (in feet):					
UTM (NAD83) - In meters	UTM Zone 13N ☐ UTM Zone 12N ☐	Easting (in meters): Northing (in meters):					
Lat/Long (WGS84) - To 1/10th of second ■ Check if seconds are decimal format	Lat:	32	deg	35	min	11.0	sec
	Long:	-103	deg	19	min	1.0	sec

Other Location Information (complete the below, if applicable):

PLSS Quarters or Halves: NE/4NE/4SE/4 Section: 11 Township: 20S Range: 36E

County: Lea

Land Grant Name (if applicable): n/a

Lot No: Block No: Unit/Tract: Subdivision:

Hydrographic Survey: Map: Tract:

Other description relating well to common landmarks, streets, or other:

Well is on Land Owned by (Required): Applicant

FOR OSE INTERNAL USE — Application for Permit, Form wr-01, Rev 6/30/17

File No.: L-15041 POD1	Trn. No.: 681311	Receipt No.:
Well Tag ID No. (if applicable): 20D32	Sub-Basin: L	Log Due Date: 11-5-21

OSE DII OCT 25 2020 PM4:07

3. PURPOSE OF USE

- ☐ Domestic use for one household
- ■ Livestock watering
- ☐ Domestic use for more than one household. Number of households _____ Note: List each lot and owner contact information.
- ☐ Drinking and sanitary uses that are incidental to the operations of a governmental, commercial, or non-profit facility
- ☐ Prospecting, mining or drilling operations to discover or develop natural resources
- ☐ Construction of public works, highways and roads
- ☐ Domestic use for one household and livestock watering
- ☐ Domestic use for multiple households and livestock watering
- ☐ Domestic well to accompany a house or other dwelling unit constructed for sale
- ☐ New well (with new purpose)
- ☐ Amend purpose of use on existing well
- ☐ No change in purpose

4. WELL INFORMATION: CHECK THOSE THAT APPLY ☐ Existing Well ☐ Known Artesian

File Information: (If existing well, provide OSE no. & indicate below if well is to be replacement, repaired or deepened, or supplemental. If new well, leave blank, as OSE must assign no.)		
OSE Well No.(If Existing)	New Well No. (provided by OSE) L-	
Well Driller Name: NM Licensed	**Well Driller License Number:** TBD	
Approximate Depth of Well (feet): 65	Outside Diameter of Well Casing (inches): up to 7"	
☐ Replacement well (List all existing wells if more than one):	☐ Repair or Deepen: ☐ Clean out well to original depth ☐ Deepen well from _____ to _____ ft. ☐ Other (Explain):	☐ Supplemental well (List OSE No. for all wells this will supplement):

5. ADDITIONAL STATEMENTS OR EXPLANATIONS (Use additional sheets if necessary)

Application to drill a new livestock well. Well will be drilled up to the the maximum depth of the fill to the top of the Chinle red bed.

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Chris Cortez (Atkins Engineering Associates, Inc as agent for the applicant)
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Chris Cortez
Applicant Signature

Applicant Signature

ACTION OF THE OFFICE OF THE STATE ENGINEER (FOR OSE USE ONLY)

This application is approved subject to the attached general and specific conditions of approval.

Witness my hand and seal this 5 day of Nov 2020, for the New Mexico State Engineer,

By: Signature

Print

FOR OSE INTERNAL USE

Well Tag ID Issued? ☒ Yes ☐ No

Application for Permit, Form wr-01, Rev 6/30/17

File No.: L-1504	Trn No.: 681311	Well ID Tag No.: 20D32

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (A thru R)

17-A The maximum combined diversion of all wells that may be appropriated under this permit is 3.000 acre-feet in any year (One acre-foot equals 325,851 gallons).

17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig; provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record. The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

17-D The production casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

17-E To request a change to the purpose of use of water authorized under this permit, the permittee shall file an application with the State Engineer.

17-F An application for a new 72-12-1.1 NMSA 2003 domestic well permit where the proposed point of diversion is to be located on the same legal lot of record as an operational 72-12-1.1 NMSA domestic well shall be treated as an application for a supplemental well and the combined diversion may not exceed the maximum annual diversion permitted.

17-G If artesian water is encountered, the well driller shall comply with all rules and regulations pertaining to the drilling and casing of artesian wells.

17-H The drilling of the well and amount and uses of water permitted are subject to such limitations as may be imposed by a court or by lawful municipal or county ordinance which are more restrictive than the conditions of this permit and applicable State Engineer regulations.

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

17-I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

17-J The well shall be set back a minimum of 50 ft. from an existing well of other ownership unless a variance has been granted by the State Engineer. The State Engineer may grant a variance for a replacement well or to allow for maximum spacing of the well from a source of groundwater contamination. The well shall be set back from potential sources of contamination in accordance with federal, state, and local requirements.

17-K Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

17-L The permit is subject to cancellation for non-compliance with the conditions of approval or if otherwise not exercised in accordance with the terms of the permit.

17-M The right to divert water under this permit is subject to curtailment by priority administration as implemented by the State Engineer or a court.

17-N In the event of any change of ownership to this permit the new owner shall file a change of ownership form with the State Engineer in accordance with Section 72-1-2.1 NMSA 1978.

17-O This well permit shall automatically expire unless the well is completed and the well record is filed with the State Engineer within one year of the date of issuance of the permit.

17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

17-Q The State Engineer retains jurisdiction over this permit.

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

17-R The State Engineer shall supply a well identification tag for the well driller to firmly affix to the well casing or cap with a steel band upon completion in accordance with Subsection M of 19.27.4.29 NMAC.
The permit holder is responsible for maintaining the well identification tag.

Well Tag(s) associated with this permit:
20D32

SPECIFIC CONDITIONS OF APPROVAL

17-1B Depth of the well shall not exceed the thickness of the Ogallala formation.

17-10 Total diversion from all wells under this permit number shall not exceed 3.000 acre-feet per annum.

17-14 This permit authorizes the diversion of water for watering livestock. The total diversion of water under this permit shall not exceed 3.000 acre-feet per year.

LOG This permit will automatically expire unless the well L 15041 POD1 is completed and the well record filed on or before 11/05/2021.

ACTION OF STATE ENGINEER

This application is approved for the use indicated, subject to all general conditions and to specific conditions listed above.

Witness my hand and seal this 05 day of Nov A.D., 2020

John R. D Antonio, Jr., P.E., State Engineer

By: YOLANDA MENDIOLA

Trn Desc: L 15041 POD1 File Number: L 15041
Log Due Date: 11/05/2021 Trn Number: 681311
Form: wr-01

John R. D Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 681311
File Nbr: L 15041

Nov. 05, 2020

CHRIS CORTEZ, AEA
L&K RANCH LLC
2904 W 2ND ST
ROSWELL, NM 88201

Greetings:

Enclosed is your copy of the above numbered permit that has been approved in accordance with NM Statute Section 72-12-1 subject to the conditions set forth on the approval page.

Carefully review the attached conditions of approval for these specific permit requirements:

* The applicant is responsible for providing the contracted driller with the permit Conditions of Approval and the enclosed well identification tag (if applicable), which must be firmly affixed to the well casing or cap.

* If metering is required, a meter report form must be properly completed and submitted to this office upon installation.

* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole. When conditions require a replaced well be plugged, a plugging record must be properly completed and submitted to this office within 30 days of plugging.

* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

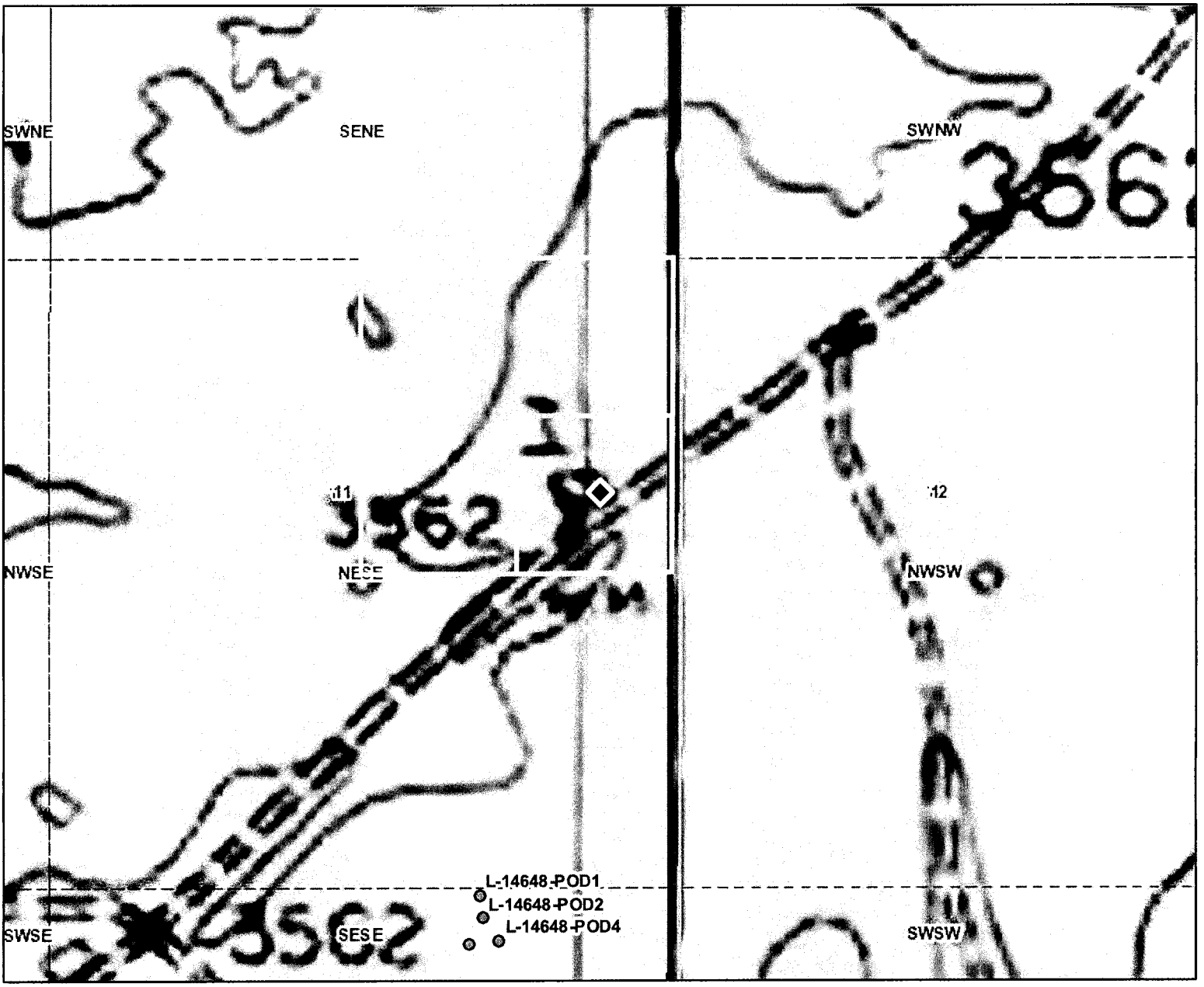
Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,

Yolanda Mendiola
(575)622-6521

Enclosure

wr_01app



NEW MEXICO OFFICE OF THE STATE ENGINEER

Coordinates

UTM - NAD 83 (m) - Zone 13
Easting 657963.994
Northing 3606684.650

State Plane - NAD 83 (f) - Zone E
Easting 854394.016
Northing 578552.580

Degrees Minutes Seconds
Latitude 32 : 35 : 11.000000
Longitude -103 : 19 : 1.000000

Location pulled from Coordinate Search

N

1:4,514

ft
0 90 180 360

Image Info
Source: NA
Date: NA
Resolution (m):NA
Accuracy (m): NA

Spatial Information

OSE Administrative Area: Lea
County: Lea
Groundwater Basin: Lea County
Abstract Area:L

Sub-Basin: Landreth-Monumnet Draws

Land Grant: Not in Land Grant
Restrictions:
Lea County Critical Management Area

PLSS Description
SENENESE Qtr of Sec 11 of 020S 036E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

Calculated PLSS
Coord Search Location

GIS WATERS PODs
Pending

Lea County Parcels 2020
Sections
BLM Land Grant
PLSSTownship
PLSSFirstDiv...

PLSSSecond...
USA Topo Maps

POD Information

Owner:
File Number: L-15041-POD1
POD Status: NoData
Permit Status: NoData
Permit Use: NoData
Purpose:

11/5/20

Office of the State Engineer
Water Rights District II– Roswell:
1900 W 2nd St
Roswell, NM 88201

RE: Agent Authorization Atkins Engineering Associates, Inc.

To whom it may concern:

L & K Ranch, LLC authorizes Atkins Engineering Associates, Inc. to act as its agent for any filings associated with its properties in Lea County.

Ashley Klein, Assistant Manager — Date: 10-15-18

ACKNOWLEDGEMENT:

STATE OF Texas)

)

COUNTY OF Tarrant)

This instrument was acknowledged before me this 15 day of October, 2018, by Ashley Klein, Assistant Manager of L & K Ranch, LLC, on behalf of said company.

Notary Public

NOTARY PUBLIC STATE OF TEXAS
Jonathan Luis Alvarado
My Commission Expires
01/04/2022
ID No. 131398245

My Commission Expires: 01-04-2022

Atkins
ENGINEERING ASSOCIATES INC.

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

10/19/2020

Office of the State Engineer
Water Rights District 2– Roswell:
1900 W 2nd St
Roswell, NM 88201

Hand delivered to the Office of the State Engineer

File:L-
Re: Livestock Application

To Whom it May Concern:

Enclosed please find, in triplicate, *Application For permit to Use Underground Water in Accordance with Sections 72.12.1.2.* A check for $5.00 is included with an agent authorization.

If you have any questions, please contact me at chris@atkinseng.com or 575.914.0174.

Sincerely,

Chris Cortez

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
NA	L 14799 POD1	1	1	2	14	20S	36E	657271	3605935

Driller License: **Driller Company:**

Driller Name:

Drill Start Date: **Drill Finish Date:** **Plug Date:**

Log File Date: **PCW Rcv Date:** **Source:**

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

Casing Size: **Depth Well:** **Depth Water:**

File No. L-14799

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS IN ACCORDANCE WITH SECTIONS 72-12-1.1, 72-12-1.2, OR 72-12-1.3 NEW MEXICO STATUTES

For fees, see State Engineer website: http://www.ose.state.nm.us/

1. APPLICANT(S)

Name: L&K Ranch, LLC	Name:
Contact or Agent: check here if Agent ■ Atkins Engineering Associates, Inc. 2904 W 2nd St., Roswell,NM	Contact or Agent: check here if Agent ☐
Mailing Address: P.O. Box 1503	Mailing Address:
City: Hobbs	City:
State: Zip Code: NM 88241	State: Zip Code: 87501
Phone: ☐ Home ☐ Cell Phone (Work): 575.624.2420 Agent	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): chris@atkinseng.com	E-mail (optional):

■ Check here if existing well. Enter OSE File No. unknown

2. WELL LOCATION Required: Coordinate location must be New Mexico State Plane (NAD 83), UTM (NAD 83), or Lat/Long (WGS84). District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

NM State Plane (NAD83) - In feet	NM West Zone ☐ NM Central Zone ☐ NM East Zone ☐	X (in feet): Y (in feet):					
UTM (NAD83) - In meters	UTM Zone 13N ☐ UTM Zone 12N ☐	Easting (in meters): Northing (in meters):					
Lat/Long (WGS84) - To 1/10th of second ☐ Check if seconds are decimal format	Lat:	32	deg	34	min	47	sec
	Long:	103	deg	19	min	28	sec

Other Location Information (complete the below, if applicable):

PLSS Quarters or Halves: NWNWNE Section: 14 Township: 20S Range: 36E

County: Lea

Land Grant Name (if applicable): n/a

Lot No: Block No: Unit/Tract: Subdivision:

Hydrographic Survey: Map: Tract:

Other description relating well to common landmarks, streets, or other:

Well is on Land Owned by (Required): Applicant

FOR OSE INTERNAL USE

Application for Permit, Form wr-01, Rev 6/30/17

File No.: L-14799	Trn. No.: 661607	Receipt No.: 2-41370
Well Tag ID No. (if applicable): —	Sub-Basin: L	Log Due Date: —

3. PURPOSE OF USE

- ☐ Domestic use for one household
- ■ Livestock watering
- ☐ Domestic use for more than one household. Number of households _____ Note: List each lot and owner contact information.
- ☐ Drinking and sanitary uses that are incidental to the operations of a governmental, commercial, or non-profit facility
- ☐ Prospecting, mining or drilling operations to discover or develop natural resources
- ☐ Construction of public works, highways and roads
- ☐ Domestic use for one household and livestock watering
- ☐ Domestic use for multiple households and livestock watering
- ☐ Domestic well to accompany a house or other dwelling unit constructed for sale
- ☐ New well (with new purpose)
- ☐ Amend purpose of use on existing well
- ☐ No change in purpose

4. WELL INFORMATION: CHECK THOSE THAT APPLY ■ Existing Well ☐ Known Artesian

File Information: (If existing well, provide OSE no. & indicate below if well is to be replacement, repaired or deepened, or supplemental. If new well, leave blank, as OSE must assign no.)		
OSE Well No.(If Existing) Unknown	New Well No. (provided by OSE) L-	
Well Driller Name: Unknown	**Well Driller License Number:** unknown	
Approximate Depth of Well (feet): 50	Outside Diameter of Well Casing (inches): 4.5"	
☐ Replacement well (List all existing wells if more than one):	☐ Repair or Deepen: ☐ Clean out well to original depth ☐ Deepen well from _____ to _____ ft. ☐ Other (Explain):	☐ Supplemental well (List OSE No. for all wells this will supplement):

5. ADDITIONAL STATEMENTS OR EXPLANATIONS (Use additional sheets if necessary)

Existing PVC well. Applicant wants to permit Livestock use.

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Christopher Cortez (Atkins Engineering Associates, Inc as agent for the applicant).
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

ACTION OF THE OFFICE OF THE STATE ENGINEER (FOR OSE USE ONLY)

This application is approved subject to the attached general and specific conditions of approval.

Witness my hand and seal this 28th day of Oct 20 19, for the New Mexico State Engineer,

By: Signature Claudia K. Guillen Print

FOR OSE INTERNAL USE

Well Tag ID Issued? ☐ Yes ☒ No

Application for Permit, Form wr-01, Rev 6/30/17

File No.: L-14799	Trn No.: 661607	Well ID Tag No.: _____

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (A thru R)

17-A The maximum combined diversion of all wells that may be appropriated under this permit is 3.000 acre-feet in any year (One acre-foot equals 325,851 gallons).

17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig; provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

17-C The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. It is the well owner's responsibility to ensure that the well driller files the well record. The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

17-D The production casing shall not exceed 7 inches outside diameter except under specific conditions in which reasons satisfactory to the State Engineer are shown.

17-E To request a change to the purpose of use of water authorized under this permit, the permittee shall file an application with the State Engineer.

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17-H The drilling of the well and amount and uses of water permitted are subject to such limitations as may be imposed by a court or by lawful municipal or county ordinance which are more restrictive than the conditions of this permit and applicable State Engineer regulations.

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

17-I The permittee shall utilize the highest and best technology available to ensure conservation of water to the maximum extent practical.

17-J The well shall be set back a minimum of 50 ft. from an existing well of other ownership unless a variance has been granted by the State Engineer. The State Engineer may grant a variance for a replacement well or to allow for maximum spacing of the well from a source of groundwater contamination. The well shall be set back from potential sources of contamination in accordance with federal, state, and local requirements.

17-K Pursuant to section 72-8-1 NMSA 1978, the permittee shall allow the State Engineer and OSE representatives entry upon private property for the performance of their respective duties, including access to the ditch or acequia to measure flow and also to the well for meter reading and water level measurement.

17-L The permit is subject to cancellation for non-compliance with the conditions of approval or if otherwise not exercised in accordance with the terms of the permit.

17-M The right to divert water under this permit is subject to curtailment by priority administration as implemented by the State Engineer or a court.

17-N In the event of any change of ownership to this permit the new owner shall file a change of ownership form with the State Engineer in accordance with Section 72-1-2.1 NMSA 1978.

17-O This well permit shall automatically expire unless the well is completed and the well record is filed with the State Engineer within one year of the date of issuance of the permit.

17-P The well shall be constructed, maintained, and operated to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic zones.

17-Q The State Engineer retains jurisdiction over this permit.

NEW MEXICO STATE ENGINEER OFFICE
APPLICATION FOR PERMIT TO USE UNDERGROUND WATERS
IN ACCORDANCE WITH SECTION 72-12-1 NEW MEXICO STATUTES

GENERAL CONDITIONS OF APPROVAL (Continued)

17-R The State Engineer shall supply a well identification tag for the well driller to firmly affix to the well casing or cap with a steel band upon completion in accordance with Subsection M of 19.27.4.29 NMAC.
The permit holder is responsible for maintaining the well identification tag.

Well Tag(s) associated with this permit:

SPECIFIC CONDITIONS OF APPROVAL

17-1B Depth of the well shall not exceed the thickness of the Ogallala formation.

17-10 Total diversion from all wells under this permit number shall not exceed 3.000 acre-feet per annum.

17-14 This permit authorizes the diversion of water for watering livestock. The total diversion of water under this permit shall not exceed 3.000 acre-feet per year.

IT IS THE PERMITTEE'S RESPONSIBILITY TO OBTAIN ALL AUTHORIZATIONS AND PERMISSIONS TO DRILL ON PROPERTY OF OTHER OWNERSHIP BEFORE COMMENCING ACTIVITIES UNDER THIS PERMIT.

ACTION OF STATE ENGINEER

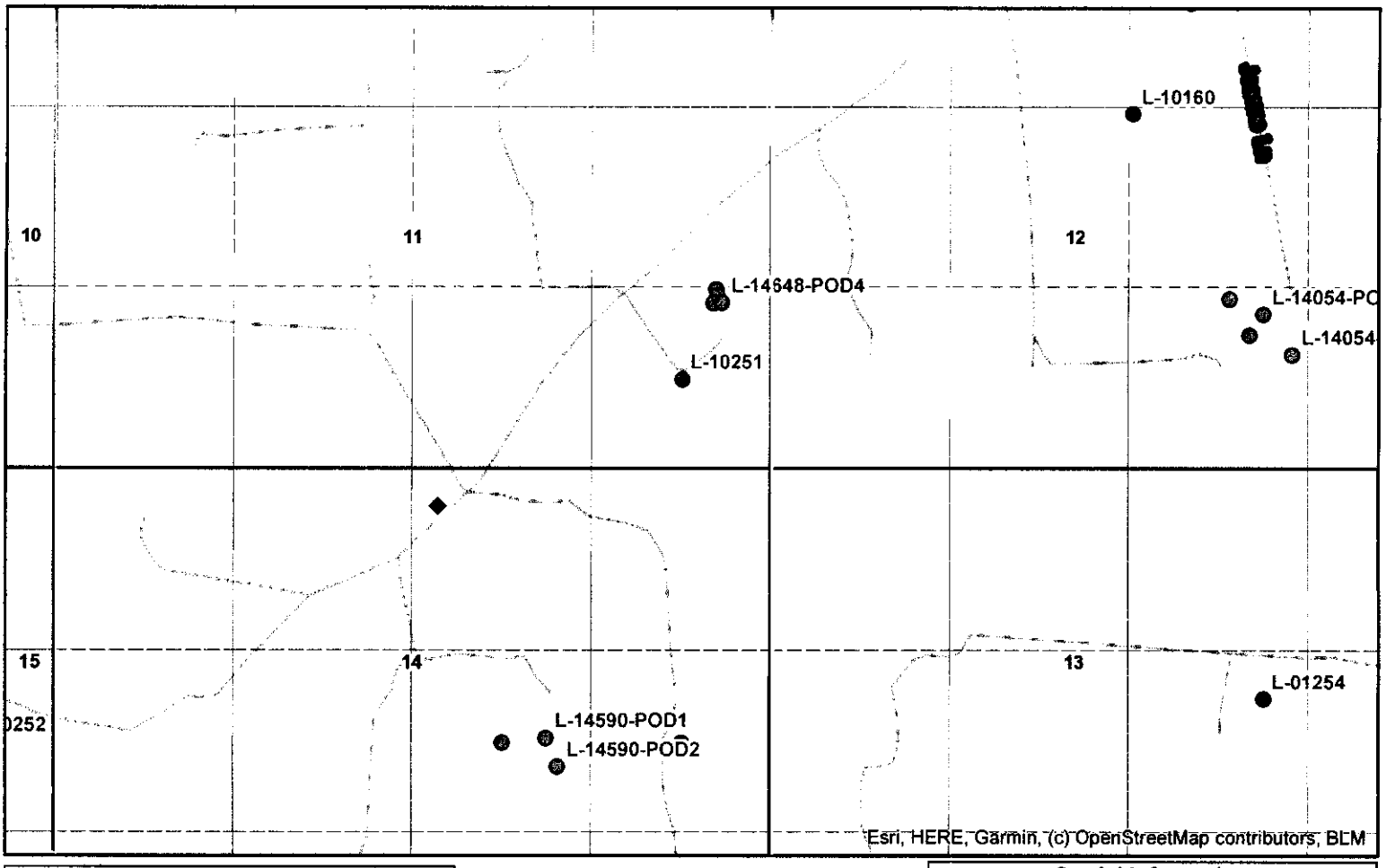
This application is approved for the use indicated, subject to all general conditions and to specific conditions listed above.

Witness my hand and seal this 28 day of Oct A.D., 2019

John R. D Antonio, Jr., P.E., State Engineer

By: CLAUDIA GUILLEN

Trn Desc: L 14799 POD1 File Number: L 14799
Log Due Date: Trn Number: 661607
Form: wr-01



Coordinates

Degrees Minutes Seconds

Latitude 32 : 34 : 47.000000

Longitude -103 : 19 : 28.000000

State Plane - NAD 83 (f) - Zone E

Easting 852106.874

Northing 576105.085

Decimal Degrees

Latitude 32.579722

Longitude -103.324444

Location pulled from Coordinate Search

NEW MEXICO OFFICE OF THE STATE ENGINEER

1:18,056

mi

0 0.05 0.1 0.2

N

GUILLEN 10/28/2019

Office of the State Engineer

Interstate Stream Commission

Spatial Information

County: Lea

Groundwater Basin: Lea County

Abstract Area:Lea County

Land Grant:
Not in Land Grant

Restrictions:

Lea County Critical Management Area

PLSS Description

NWNWNWNE Qtr of Sec 14 of 020S 036E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

Parcel Information

UPC/DocNum: 4000412520002

Parcel Owner: KLEIN, FAYE FAMILY TRUST

Address:

Legal:

POD Information

Owner: L&K RANCH/ATKINS

File Number: L-14799

POD Status: NoData

Permit Status: NoData

Permit Use: NoData

Purpose: DOM/STK

◆ Coord Search Location

GIS WATERS PODs

● Other

● ACT

● PEN

● CAP

OSE District Boundary

BLM Land Grant

☐ PLSSTownship

☐ PLSSFirstDiv...

PLSSSecond...

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
NA	L 14816 POD7	2	4	3	11	20S	36E	657116	3606357

Driller License: 1249 **Driller Company:** ATKINS ENGINEERING ASSOC. INC.

Driller Name: JACKIE D ATKINS

Drill Start Date: 08/04/2020 **Drill Finish Date:** 08/04/2020 **Plug Date:** 08/04/2020

Log File Date: 08/20/2020 **PCW Rcv Date:** **Source:**

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

Casing Size: **Depth Well:** **Depth Water:**

John R. D'Antonio, Jr., P.E.
State Engineer

Roswell Office
1900 WEST SECOND STREET
ROSWELL, NM 88201

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 661607
File Nbr: L 14799

Oct. 28, 2019

L&K RANCH, LLC
C/O CHRIS CORTEZ/ATKINS ENG ASSOC, LLC
PO BOX 1503
HOBBS, NM 88241

Greetings:

Enclosed is your copy of the above numbered permit that has been approved in accordance with NM Statute Section 72-12-1 subject to the conditions set forth on the approval page.

Carefully review the attached conditions of approval for these specific permit requirements:

* The applicant is responsible for providing the contracted driller with the permit Conditions of Approval and the enclosed well identification tag (if applicable), which must be firmly affixed to the well casing or cap.

* If metering is required, a meter report form must be properly completed and submitted to this office upon installation.

* The well record and log must be submitted within 30 days of the completion of the well or if the attempt was a dry hole. When conditions require a replaced well be plugged, a plugging record must be properly completed and submitted to this office within 30 days of plugging.

* This permit expires and will be cancelled if no well is drilled and/or a well log is not received by the date set forth in the conditions of approval.

Appropriate forms can be downloaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,

Claudia Guillen
(575)622-6521

Enclosure

wr_01app

Office of the State Engineer
Water Rights District II– Roswell:
1900 W 2nd St
Roswell, NM 88201

RE: Agent Authorization Atkins Engineering Associates, Inc.

To whom it may concern:

L & K Ranch, LLC authorizes Atkins Engineering Associates, Inc. to act as its agent for any filings associated with its properties in Lea County.

Ashley Klein, Assistant Manager — Date: 10-15-18

ACKNOWLEDGEMENT:

STATE OF Texas)

)

COUNTY OF Tarrant)

This instrument was acknowledged before me this 15 day of October, 2018, by Ashley Klein, Assistant Manager of L & K Ranch, LLC, on behalf of said company.

Notary Public

NOTARY PUBLIC STATE OF TEXAS
Jonathan Luis Alvarado
My Commission Expires
01/04/2022
ID No. 131398245

My Commission Expires: 01-04-2022

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).
POD7 (BH14)	n/a	L-14816

WELL OWNER NAME(S)	PHONE (OPTIONAL)
XTO Energy, Inc.	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6401 Holiday Hill Road	Midland	TX	79707

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	35	0.80	N
	LONGITUDE	-103	19	33.70	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

SE SW Sec. 11 T20S R36E

2. DRILLING & CASING INFORMATION

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

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
08/04/2020	08/04/2020	n/a	32	n/a

COMPLETED WELL IS: ☐ ARTESIAN ☒ DRY HOLE ☐ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): n/a

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

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

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	32	±6.5	Soil Boring	--	--	--	--

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

RECEIVED AUG 20 2020 WELLS

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

FILE NO.	L-14816	POD NO.	7	TRN NO.	675513	
LOCATION	432 T20S 36E Sec11			WELL TAG ID NO.	NA	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	0.5	0.5	CALICHE, dry, stain, off-white/tan, poorly consolidated	Y ✓ N	
0.5	5	4.5	SAND, moist, brown-light brown, poorly graded, fine grain,	Y ✓ N	
5	15	10	SANDSTONE, moist, light brown-light gray, moderately consolidated, poorly g	Y ✓ N	
15	26	11	CALICHE, dry, tan/off white, moderately consolidated, trace gypsum veins	Y ✓ N	
26	--	--	SANDSTONE, moist, brown-light brown, poorly consolidated,	Y ✓ N	
--	32	6	fine-very fine, 31-32-Well consolidated	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION: Soil boring backfilled with cutting and hydrated bentonite chips.
Log adapted from LTE on-site geologist.

OSE DIT AUG 20 2020 AM 11:52

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

Shane Eldridge

6. SIGNATURE

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

Jack Atkins — Jackie D. Atkins — 08/19/20

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

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

FILE NO. L-14816	POD NO. 7	TRN NO. 675513	
LOCATION 432 T20S 36E Sec 11		WELL TAG ID NO. NA	PAGE 2 OF 2

APPENDIX C

EPA UNDERGROUND DISCHARGE SYSTEM (CLASS V) INVENTORY SHEET

FOR SAMPLE USE ONLY – COMPARABLE FORMAT ACCEPTABLE

UNDERGROUND DISCHARGE SYSTEM (CLASS V) INVENTORY SHEET

(see instructions on back)

1. Name of facility: WTX to EMSU Battery to Byrd Pump Segment

   Address of facility: L&K Ranch near County Road 46 / - 32.583874, -103.317460

   City/Town: Monument State: NM Zip Code: 88240

   County: Lea Location:

   Contact Person: Melanie Nolan Phone Number: (214) 605-8303

2. Name of Owner or Operator: Holly Energy Partners - Operating, L.P. (HEP)

   Address of Owner or Operator: 1602 W. Main, Artesia NM 88210

   City/Town: Artesia State: NM Zip Code: 88210

3. Type & number of system(s): ___ Drywell(s) ___ Septic System(s) X Other(describe): Bioventing in Site Well
   Attach a schematic of the system. Attach a map or sketch of the location of the system at the facility.

4. Source of discharge into system: Ambient air injected into subsurface via air blower at MW-1

5. Fluids discharged: Ambient air

6. Treatment before discharge: None

7. Status of underground discharge system: ☒ Existing ☐ Unused/Abandoned ☐ Under Construction ☐ Proposed

   Approved/Permitted by: NMOCD Date constructed: MW-1: 11/2020

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

Signature: Melanie Nolan Date: 4-1-2022

Name (printed): Melanie Nolan

Official Title: HEP-Environmental Specialist

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

UNDERGROUND DISCHARGE SYSTEM (CLASS V) INVENTORY SHEET INSTRUCTIONS

Complete one sheet for each different kind of underground discharge or drainage system (Class V well) at your facility or location. For example, several storm water drainage wells of a similar construction can all go on one sheet. Another example could be a business with a single septic system (septic tank with drainfield) that accepts fluids from a paint shop sink in one area, their vehicle maintenance garage floor drains in another area and also serves the employee kitchenette and washroom: this can all go on one form.

The numbers below correspond to the numbers on the front of the sheet.

1. Supply the name and street address of the facility where the Class V well(s) is located. Please be sure to include the County name. If available, provide the Latitude/Longitude of the discharge system. If there is no street address for the discharge system(s), provide a description of the location and show the location on a map. Include the name and phone number of a person to contact if there are any questions regarding the underground discharge system(s) and/or the wastewaters discharged at the facility.

2. Provide the name and mailing address of the owner of the facility or if the facility is operated by lease, the operator of the facility.

3. Provide the number of underground discharge systems at the facility (or location) for the type of system that is described on this sheet. Please use a separate sheet for each different type of system present. If the type of system is "Other", please describe (e.g., french drain, leachfield, improved sinkhole, cesspool, etc.).

   Provide a sketch, diagram or blueprints of the construction of the system including the depth below the ground surface that the fluids are released into the soil, sediment or formation. Also provide a map or sketch of the layout of the pluming or drainage system, including all the connections, and if applicable, indicate each fluid source connection (i.e., floor drains, shop sink, process tank discharge, restrooms, etc.) and any pre-treatment, etc.

4. Describe the kind of business practice that generates the fluids being discharged into the underground system (e.g., body shop, drycleaner, carwash, print shop, restaurant, etc.), and/or if more appropriate, the source of the fluids (e.g., employee & customer restrooms, parking lot drainage, etc.). If available, include the Standard Industrial Classification (SIC) Codes for this facility.

5. List the kinds of fluids that can enter the underground system (e.g., storm water run-off, sanitary waste, solvents, biodegradable soap wash & rinse water, snowmelt from trucks, photo developing fluids, ink, paint & thinner, non-contact cooling water, etc.). Please be as specific as you can about the kinds of fluids or products that can be drained into the system. Generally, good sources for this information are the Material Safety Data Sheets (MSDS) (copies of MSDS could be attached instead of listing all the products). If available, also attach a copy of any chemical analysis for the fluids discharged.

6. Describe the kinds of treatment (if any) that the fluids go through before disposal. Examples of treatment are: grease trap, package plant, oil/water separator, catch basin, metal recovery unit, sand filter, grit cleanser, etc.

7. Select the status of the underground discharge system and include the date the system was constructed. If the status is “Existing” but it is not being used, is unusable, will not be used, or is temporarily abandoned, mark the box for “Unused/Abandoned”. If state or local government approval was given for construction of the system, or a permit was issued for the system, please provide the name of the approving authority. Provide an estimated date of construction if the actual date is unknown.

The person signing the submittal should read the certification statement before signing and dating the sheet.

If you have any questions about whether or not you may have an EPA regulated system, or about how to complete this sheet, please call (312) 886-1492. You may also try our website at www.epa.gov/r5water/uic/uic.htm for information.

Please send completed sheets to: U.S. EPA Region 5
Underground Injection Control Branch
ATTN: Lisa Perenchio (WU-16J)
77 W. Jackson Blvd.
Chicago, IL 60604

8/02

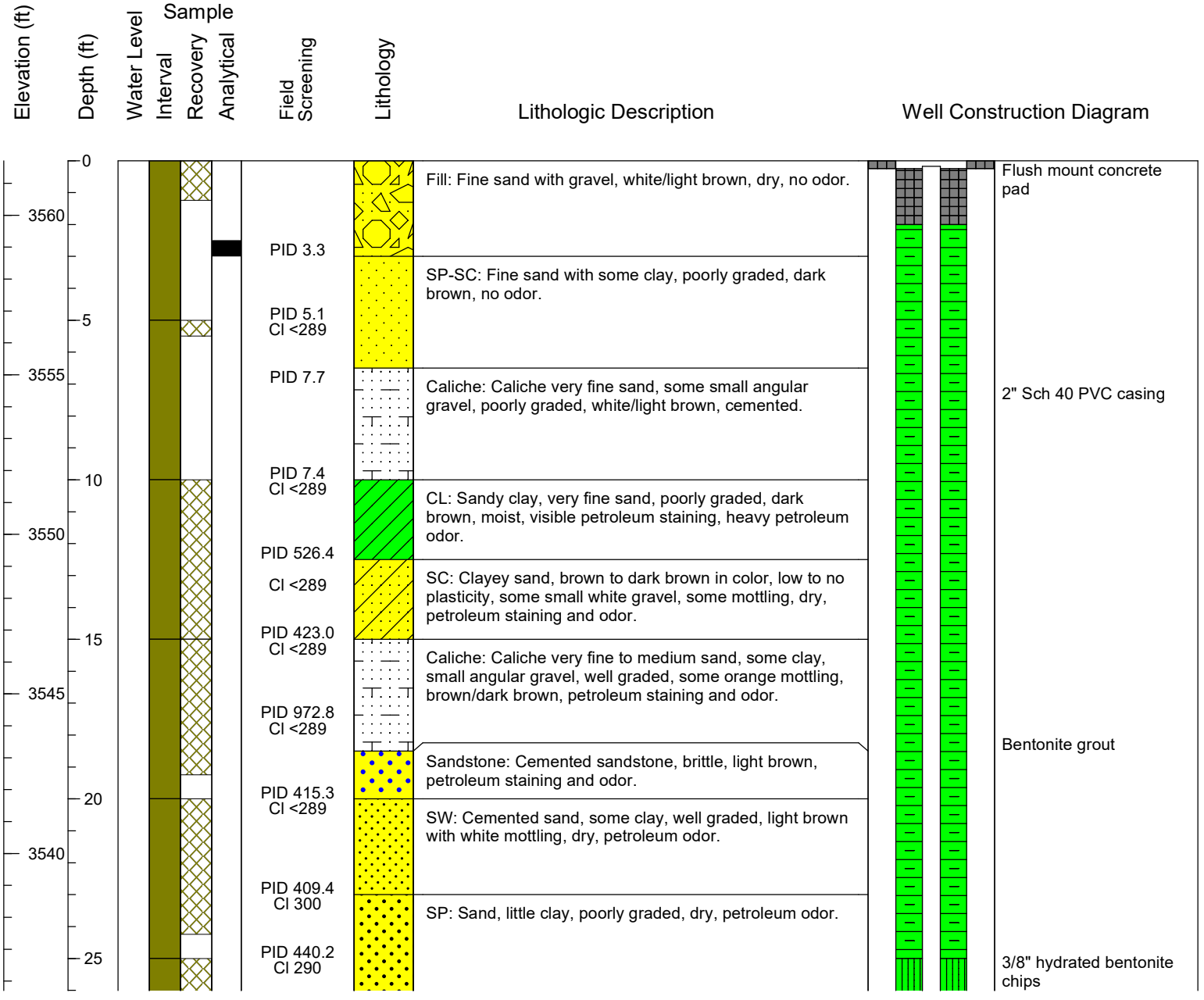
APPENDIX D

MW-1 THROUGH MW-5 WELL CONSTRUCTION LOGS

BORING LOG and WELL CONSTRUCTION

MW-01 (SB-05)

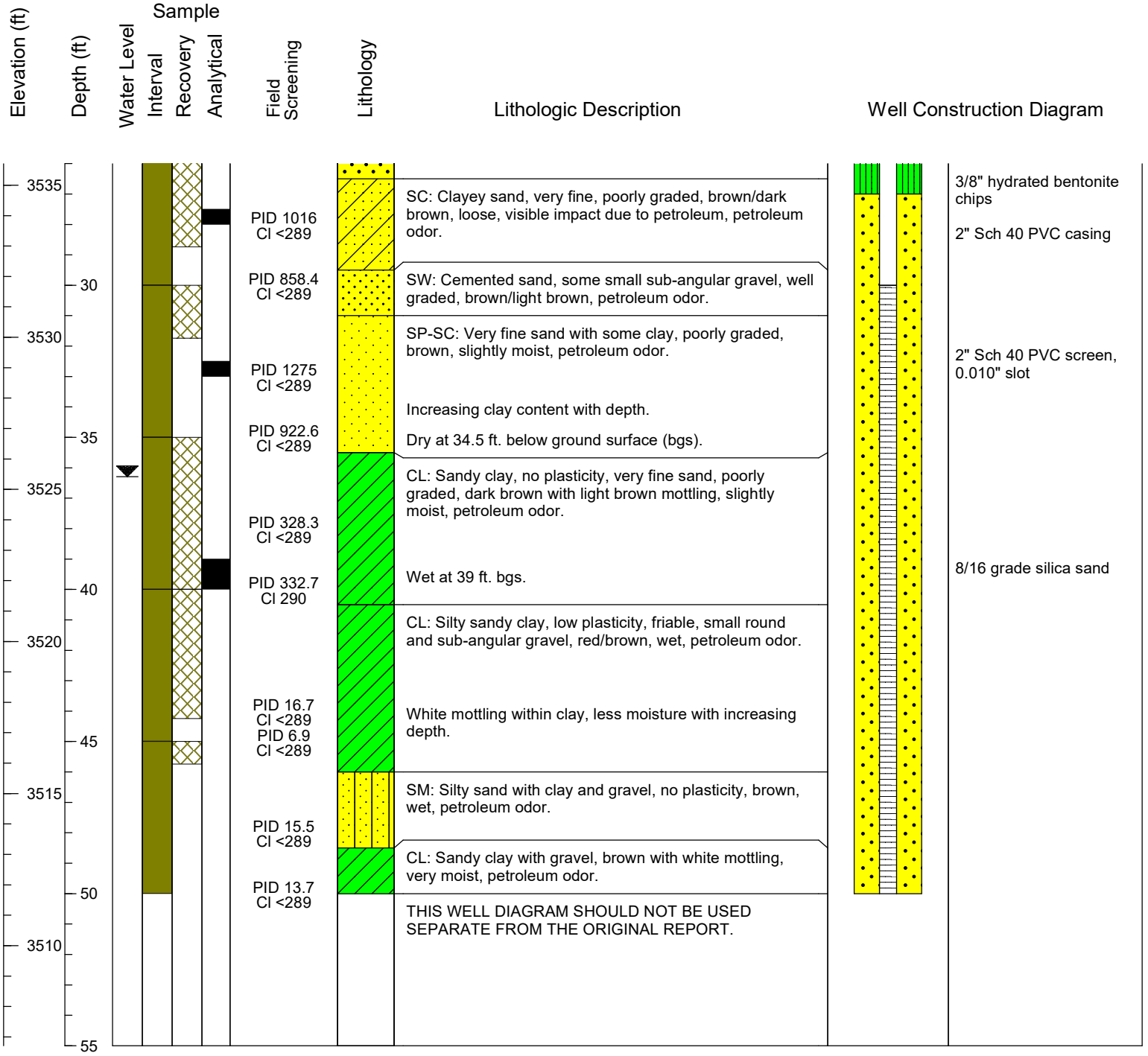
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/03/2020
Address: Klein Ranch, Monument, NM	Finish Date: 11/03/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.583908
Blow Count Method: NA	Longitude: -103.317464
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3561.71
Well Depth (ft bgs): 49.43 — Well Depth (ft toc): 49.25	Well Elevation (ft): 3561.53
Casing Length (ft): 29.25 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 36.29
Well Development: Purged 55 gallons	Date/Time: 11/07/2020 16:00



BORING LOG and WELL CONSTRUCTION

MW-01 (SB-05)

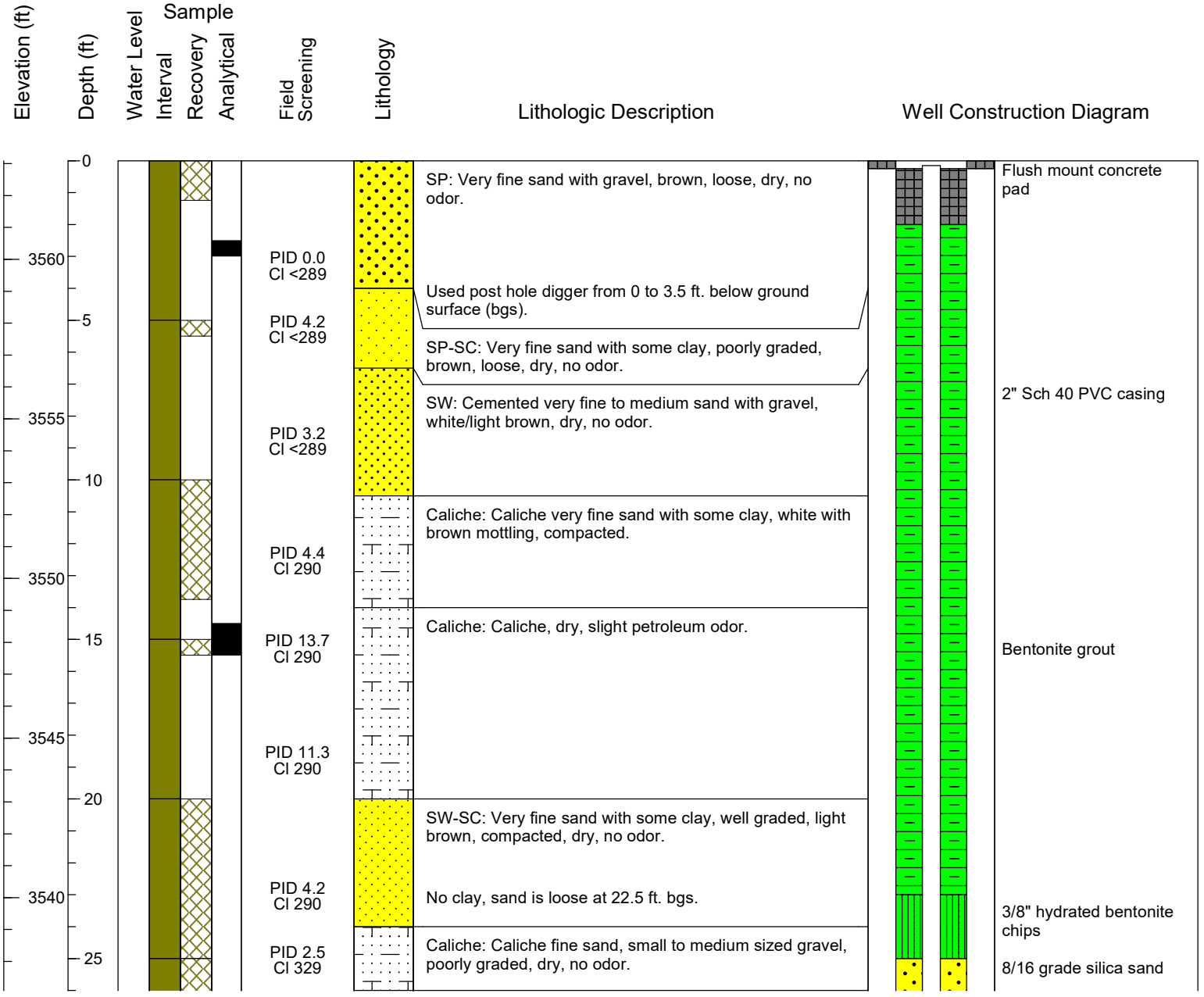
Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	Page 2 of 2



BORING LOG and WELL CONSTRUCTION

MW-02 (SB-06)

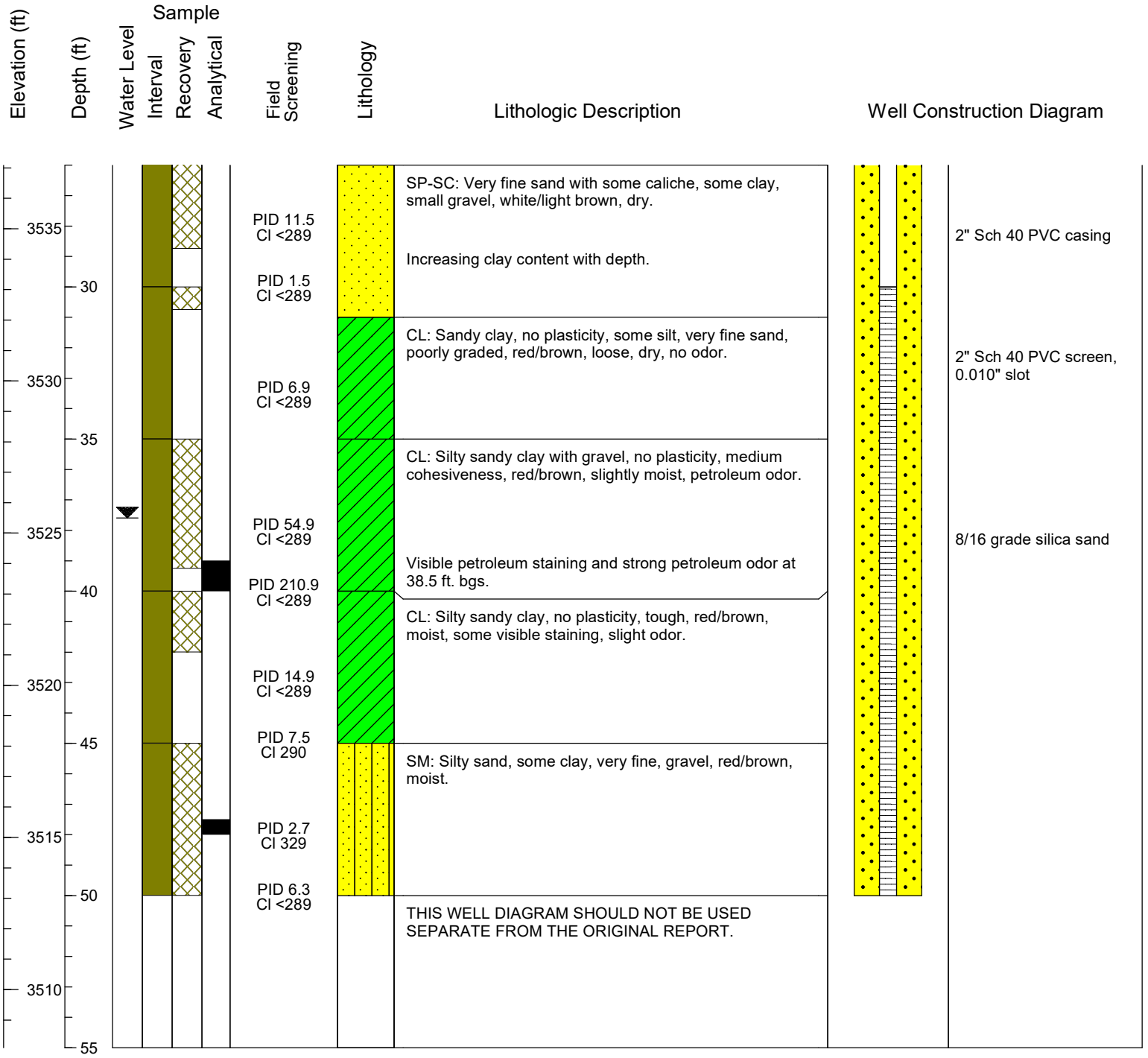
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/04/2020
Address: Klein Rach, Monument, NM	Finish Date: 11/04/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.584046
Blow Count Method: NA	Longitude: -103.317430
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3563.09
Well Depth (ft bgs): 49.64 — Well Depth (ft toc): 49.49	Well Elevation (ft): 3562.94
Casing Length (ft): 29.49 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 37.59
Well Development: Purged 55 gallons	Date/Time: 11/07/2020 13:45



BORING LOG and WELL CONSTRUCTION

MW-02 (SB-06)

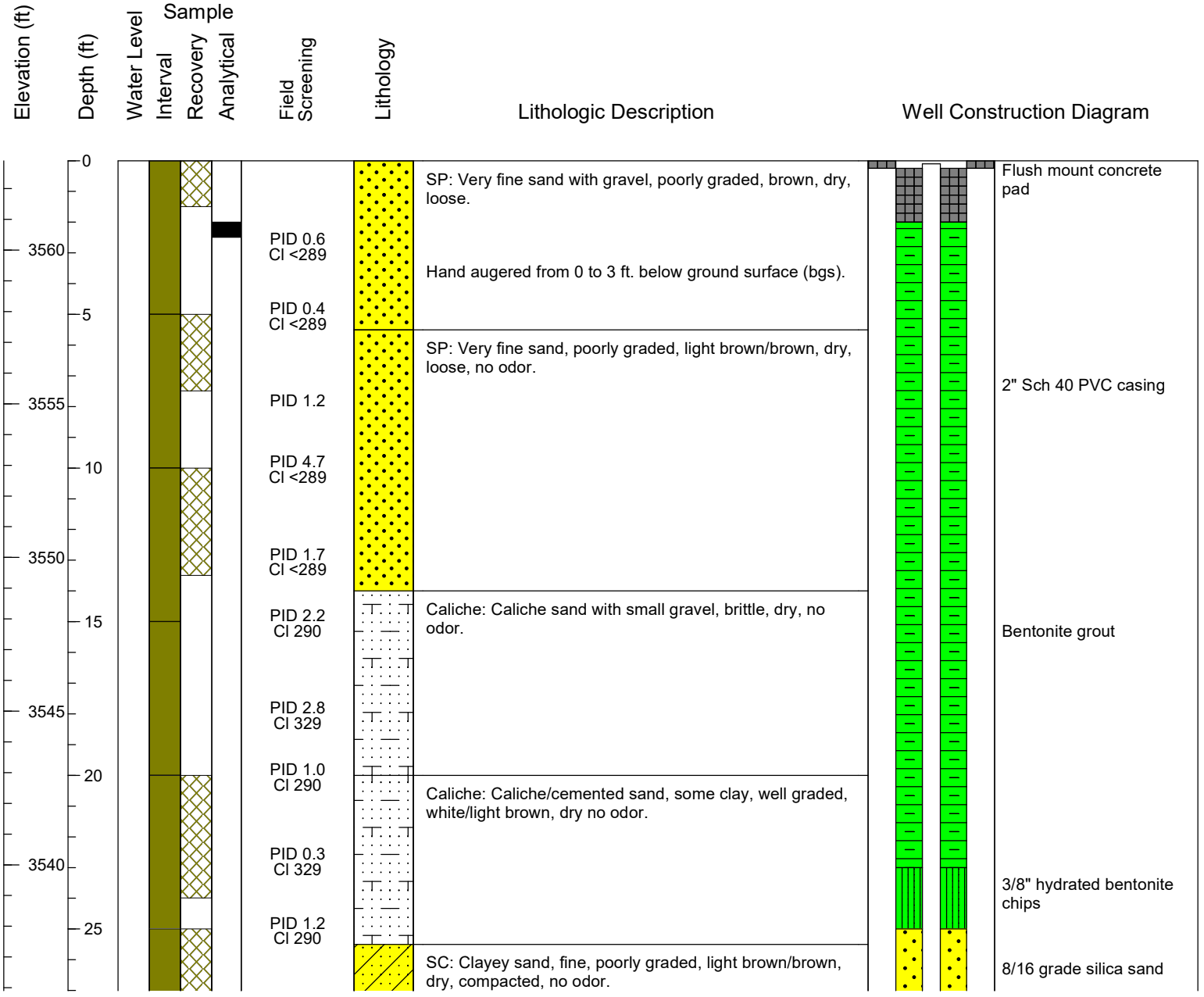
Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	Page 2 of 2



BORING LOG and WELL CONSTRUCTION

MW-03 (SB-07)

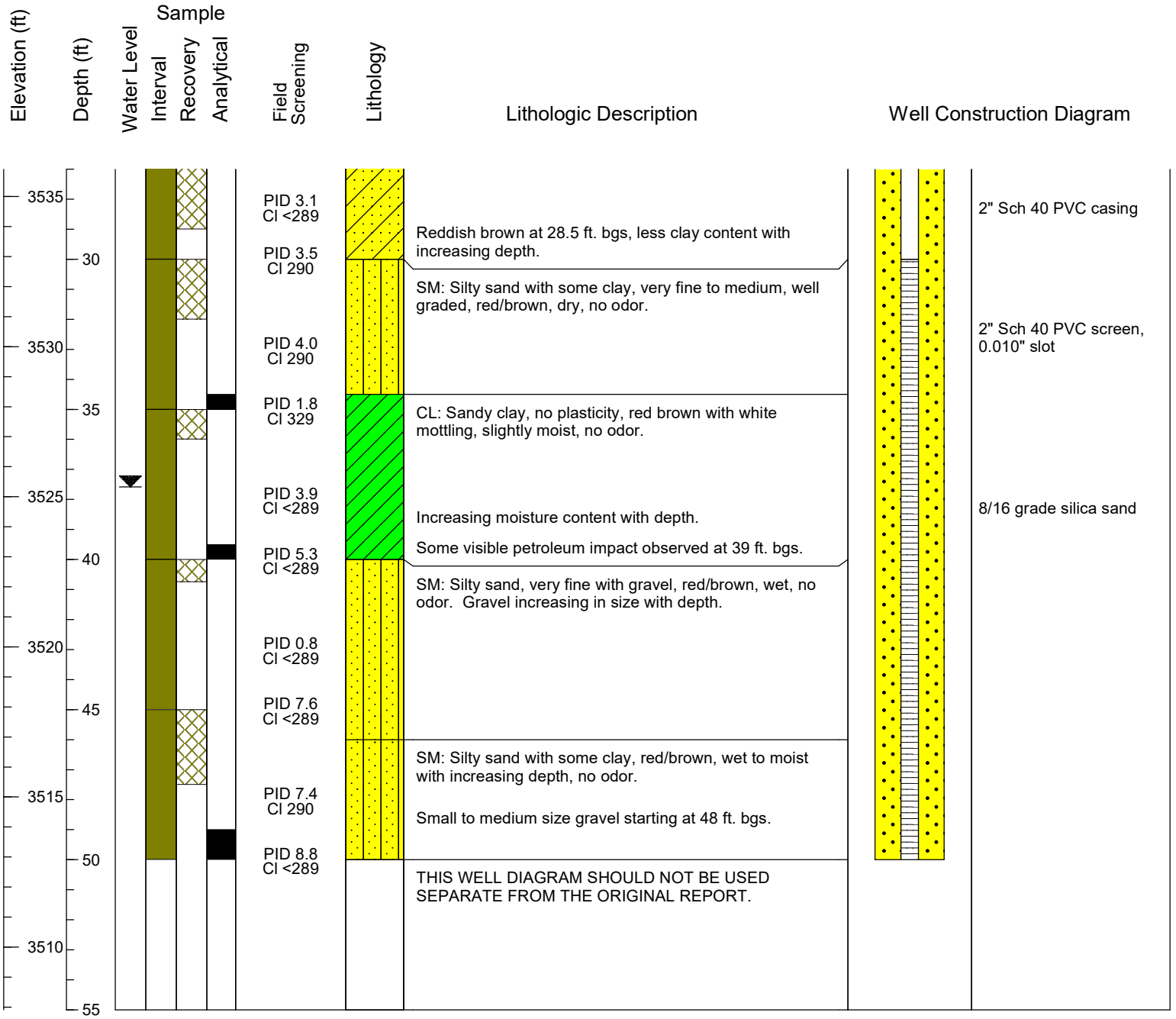
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/04/2020
Address: Klein Ranch, Monument, NM	Finish Date: 11/04/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.583788
Blow Count Method: NA	Longitude: 103.317594
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / mg/L	Ground Elevation (ft): 3562.91
Well Depth (ft bgs): 50.03 — Well Depth (ft toc): 49.93	Well Elevation (ft): 3562.81
Casing Length (ft): 29.93 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 37.58
Well Development: Purged 30 gallons	Date/Time: 11/07/2020 09:00



BORING LOG and WELL CONSTRUCTION

MW-03 (SB-07)

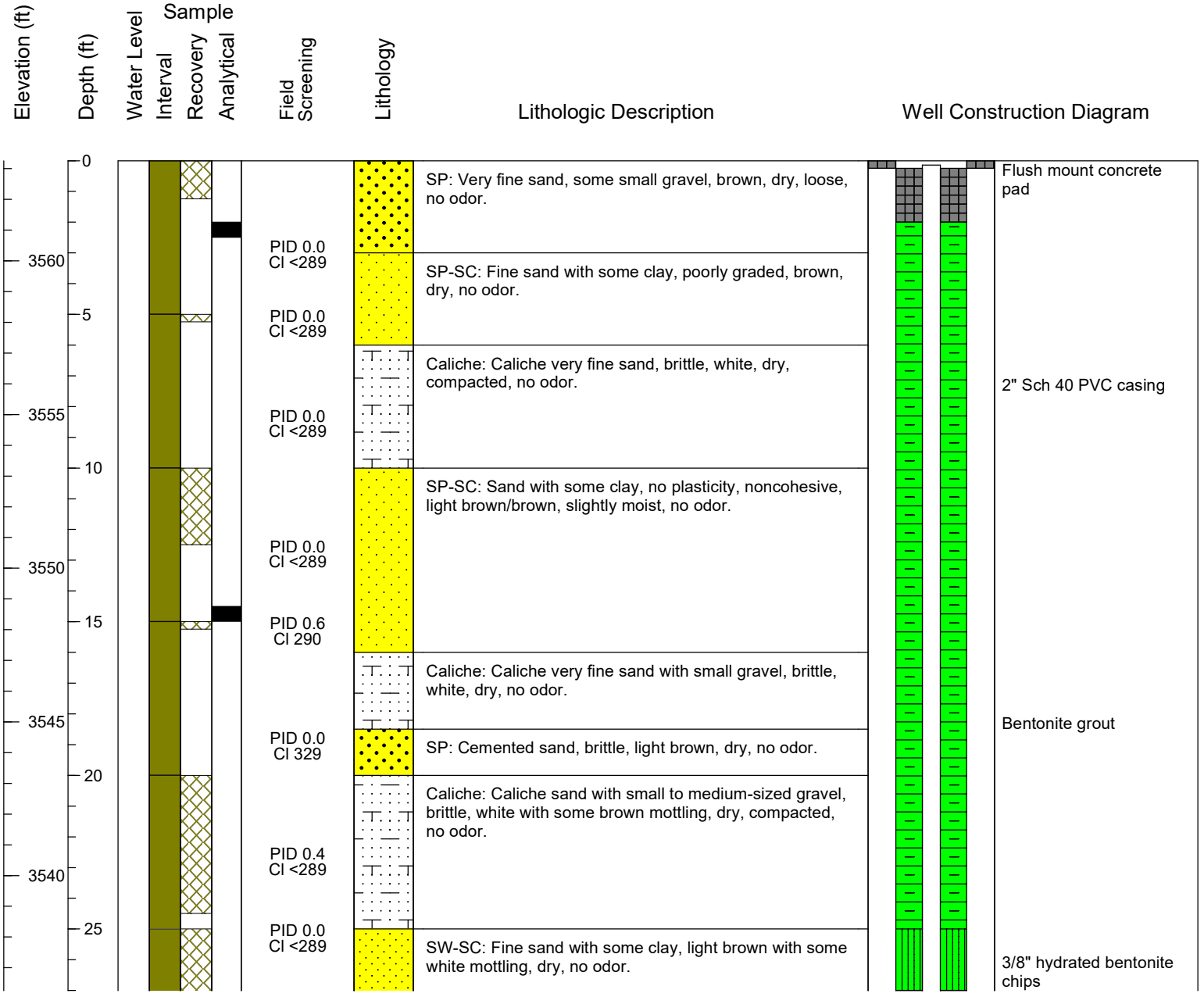
Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	Page 2 of 2



BORING LOG and WELL CONSTRUCTION

MW-04 (SB-08)

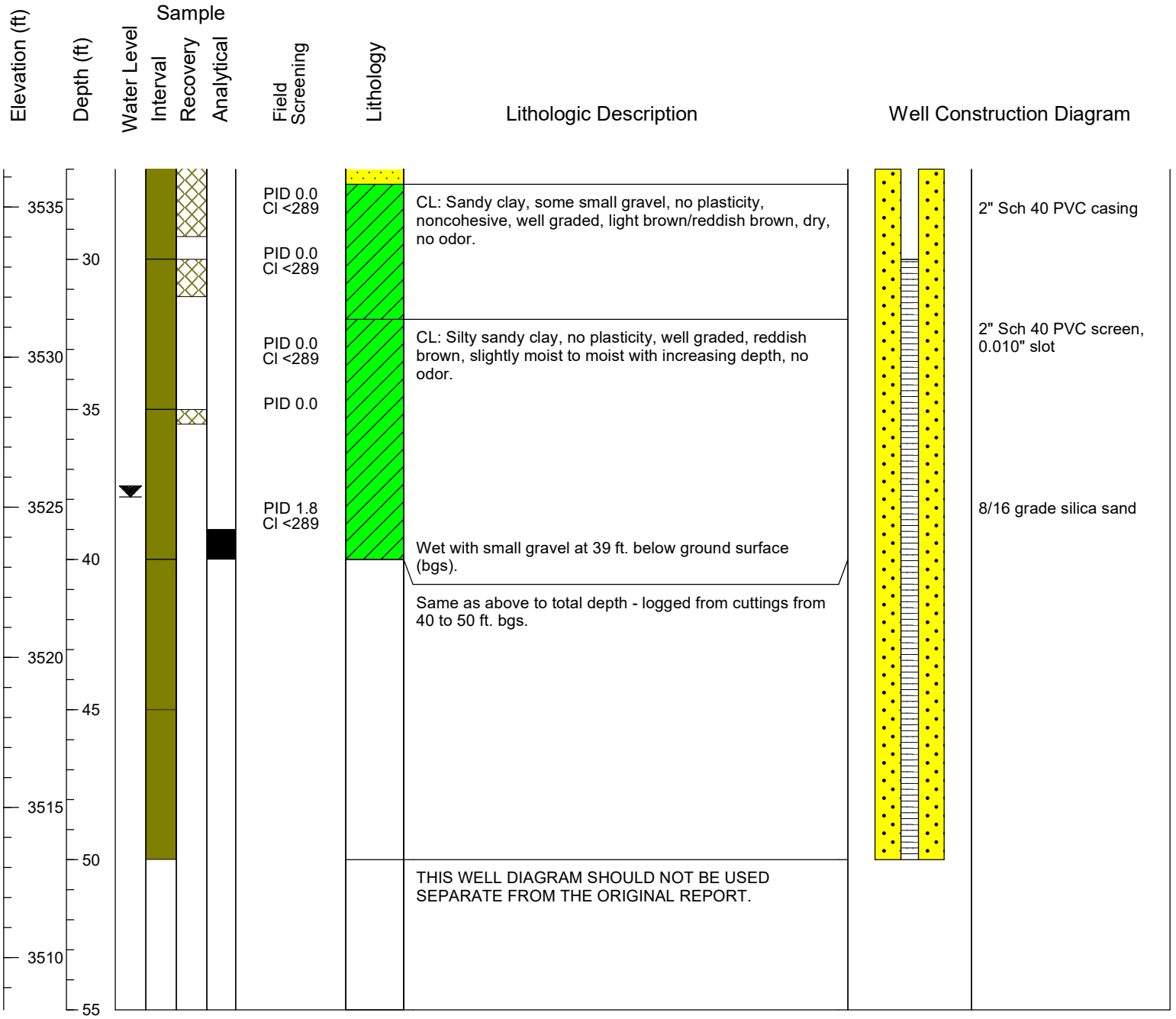
Client: Holly Energy Partners	TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 11/05/2020
Address: Klein Ranch, Monument, NM	Finish Date: 11/05/2020
Project: Monitoring Well Installation	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88 — Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab	Latitude: 32.583756
Blow Count Method: NA	Longitude: -103.317355
Field Screening Parameter: Volatile organic compounds / Chlorine	Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3563.26
Well Depth (ft bgs): 50.45 — Well Depth (ft toc): 50.31	Well Elevation (ft): 3563.12
Casing Length (ft): 30.31 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 37.92
Well Development: Purged 100 gallons	Date/Time: 11/07/2020 11:45



BORING LOG and WELL CONSTRUCTION

MW-04 (SB-08)

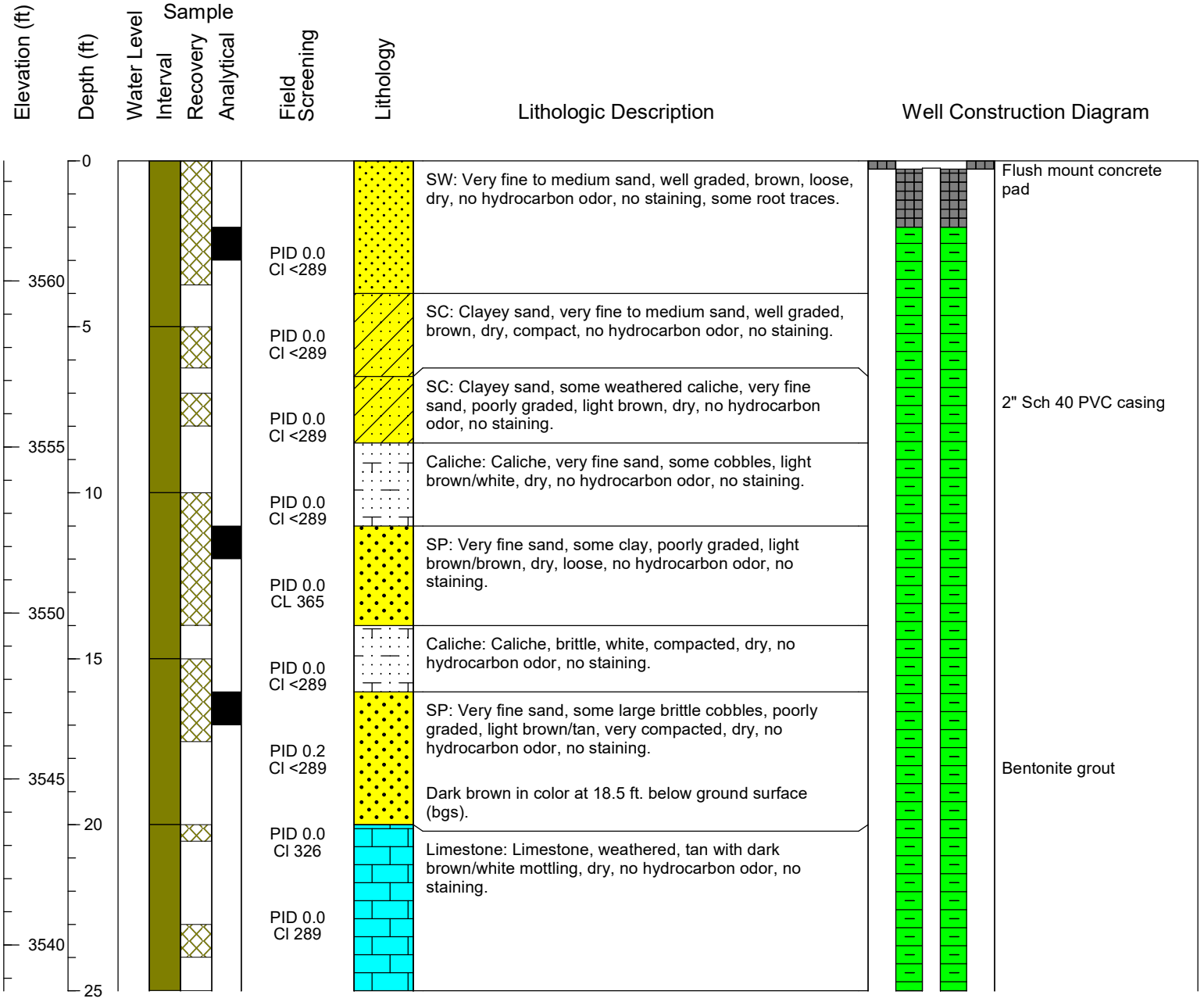
Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 374611	Page 2 of 2



BORING LOG and WELL CONSTRUCTION

MW-05 (SB-25)

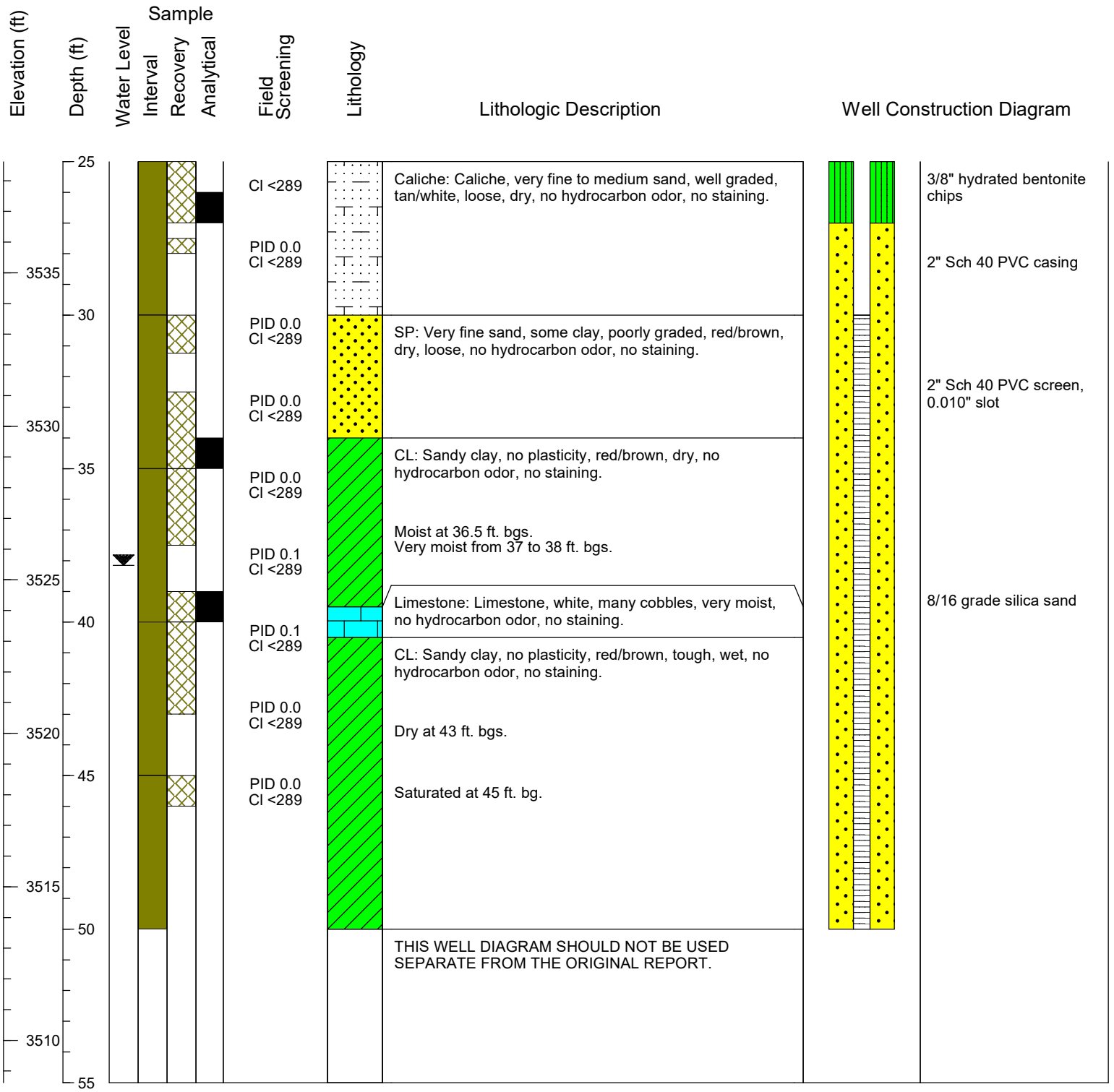
Client: Holly Energy Partners	TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Start Date: 5/26/2021
Address: Klein Ranch, Monument, NM	Finish Date: 5/28/2021
Project: Site Assessment	Permit #: NA
Drilling Company: Talon LPE — Drilling Crew: Ronnie Rodriquez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger	TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875 — Boring Depth (ft bgs): 50.0	Coord. System: NAD 83
Sampling Method: Continuous 5-ft Core Sampler	Latitude: 32.584131
Blow Count Method: NA	Longitude: -103.317565
Field Screening Parameter: Volatile Organic Compounds / Chlorine	Elevation Datum: NAVD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips — Units: ppm / ppm	Ground Elevation (ft): 3536.62
Well Depth (ft bgs): 50.0 — Well Depth (ft toc): 49.72	Well Elevation (ft): 3563.40
Casing Length (ft): 30.0 — Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad	Depth to Water (ft toc): 38.15
Well Development: Purged 7 liters	Date/Time: 5/28/2021 17:15



BORING LOG and WELL CONSTRUCTION

MW-05 (SB-25)

Client: Holly Energy Partners	Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release	Project #: 426140	Page 2 of 2



APPENDIX E

REFERENCES

References

AFCEE, 2004. Procedures for Conducting Bioventing Pilot Tests and Long-Term Monitoring of Bioventing Systems, dated May 2004.

NMOCD, 2021. Email correspondence from NMOCD to HEP, “EMSU (Klein)The Oil Conservation Division (OCD) has approved the application, Application ID: 61641,” dated December 9, 2021.

NMOCD, 2022. Email correspondence from NMOCD to HEP, “RE: TRC project for Bioventing bioremediation by aerating soils with ambient air,” dated January 18, 2022.

TRC, 2021. Site Characterization Report and Remediation Workplan, WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release, NMOCD Incident No NOY1822242858, dated November 2021.

TRC, 2022. Email correspondence from TRC to NMOCD, “Email memorializing 1/25/2022 NMOCD-HEP Discussing the WTX to EMSU Remediation Plan (NOY1822242858),” dated January 28, 2022.