COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental, Inc.

3300 North A Street
Building 1, Suite 103
Midland, Texas 79705
432-704-5178

May 4, 2018

Ms. Olivia Yu
New Mexico Oil Conservation Division
1625 N French Drive
Hobbs, New Mexico 88240

RE: Proposed Delineation Work Plan
EK 30 BS2 Federal Com 1H
1RP-5019
McElvain Energy, Inc.
Lea County, New Mexico

Dear Ms. Yu:

LT Environmental, Inc. (LTE), on behalf of McElvain Energy, Inc. (McElvain), proposes the following work plan to investigate impacted soil at the EK 30 BS2 Federal Com 1H (Site) in response to a release of approximately 25 barrels (bbls) of crude oil from the vapor recovery unit (VRU) on April 12, 2018. A third-party crude oil hauler shut a production valve on one of the crude oil storage tanks before manually gauging liquid levels. The valve was never reopened after gauging activity was completed and crude oil flooded the vapor recovery tower, then discharged through a relief valve on the VRU scrubber. The release collected on the production equipment within a lined containment and misted offsite. As reported to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification and Corrective Action Form C-141 dated April 12, 2018, McElvain recovered all standing fluids in the containment, washed affected production equipment, and disposed of the wash water. Off site, areas of a naturally occurring drainage ditch containing pooled oil were flushed with freshwater. The resultant crude oil and wash water were recovered with a vacuum truck and disposed in an off-site injection well. This work plan addresses residual impact to soil and is being submitted in response to the conditions of approval from the NMOCD documented on the C-141 and assigned Remediation Permit Number 1RP-5019.

BACKGROUND

The Site is located in southeast quarter of the southeast quarter of Section 30 within Township 18 South and Range 34 East in Lea County, New Mexico. Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest water well data, drilling logs, and known aquifer properties. The nearest permitted water well is CP-01584, located approximately 4,051.24 feet northwest of the Site with a total depth of 500 feet. Depth to water is not listed for CP-01584 in the New Mexico Office of the State Engineer's database; however, the well was drilled by McElvain, who owns the drilling log. The drilling log indicates the well was drilled to 500 feet bgs and no water was identified. The closest surface water to the Site is a stream located approximately 407 feet to the southeast of the Site. Based on these criteria, the NMOCD site ranking for remediation action level is a 10 and the following remediation action levels apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg benzene, toluene, ethylbenzene, and total xylenes (BTEX); and 1,000 mg/kg total petroleum hydrocarbons (TPH).

Based on standard practice in the region, a site-specific chloride action level of 600 mg/kg or within range (±10%) of background concentrations applies.

PROPOSED SAMPLING AND DELINEATION

McElvain originally proposed remediation through application of a microbial amendment; however, in an effort to accelerate the remediation timeline and based on the limited volume of the release that affected areas outside of the lined containment, LTE proposes using heavy equipment to remove vegetation and soil immediately. Once impacted vegetation is removed, soil in the impacted areas on the well pad and west of the well pad will be excavated until soil samples are compliant with NMOCD standards. As soil is removed, LTE personnel will conduct field screening of organic vapor concentrations with a photoionization detector (PID) according to NMOCD headspace techniques and chloride using Hach® chloride test strips to determine if additional excavation is required. Once field screening results indicate impacted soil had been removed, LTE will collect confirmation surface samples if the excavation is less than two feet deep. Sidewall and floor samples will be collected if the excavation is greater than two feet deep. Soil samples will be collected to cover approximately every 2,500 square feet of the floor of the excavation and, if necessary, approximately every 50 linear feet of sidewalls. Soil samples will be stored on ice and delivered to a certified laboratory under strict chain-of-custody procedures. Soil samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (EPA), Method 8021, total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) and - diesel range organics (DRO) by EPA Method 8015, and chloride by EPA Method 300.1.

Soil excavation will address the full lateral and vertical extent of impact encountered. All excavated soil will be transported to a NMOCD permitted disposal. Upon receipt of samples documenting compliance with NMOCD standards, LTE will backfill the on-site excavated area with new caliche. Should backfill be required in the off-site area, LTE will apply soil that blends with the native surroundings, contour to match the natural grade, and reseed with BLM seed mix #2.

On site, LTE will inspect the liner where release and wash water liquids pooled for damage. LTE will document integrity of the liner with photographs to confirm no soil beneath the liner was impacted.

REPORTING

LTE will prepare a report documenting all field activities and describing results for submittal to the NMOCD. The report will include site maps and a table of laboratory analytical results from confirmation soil samples. Recommendations for any additional work will be included as necessary.

SCHEDULE

McElvain will complete the investigation within four weeks of the date of approval of this work plan by NMOCD. The report will be submitted to the NMOCD within two weeks of receipt of laboratory analytical results from confirmation soil samples.

LTE appreciates the opportunity to provide this proposed work plan to the NMOCD. If you have any questions or comments regarding this plan, do not hesitate to contact me at (432) 704-5178 or via email at abaker@ltenv.com or Tony Cooper at McElvain (303) 962-6489 or Tony.Cooper@McElvain.com.

Sincerely,
LT ENVIRONMENTAL, INC.

Adrian Baker

Project Geologist

Attachments:
Figure 1 Site Location Map
Figure 2 Spill Area Map

Cc: Tony Cooper, McElvain
Olivia Yu, NMOCD
Shelly Tucker, BLM
Jim Amos, BLM

FIGURES

Advancing Opportunity

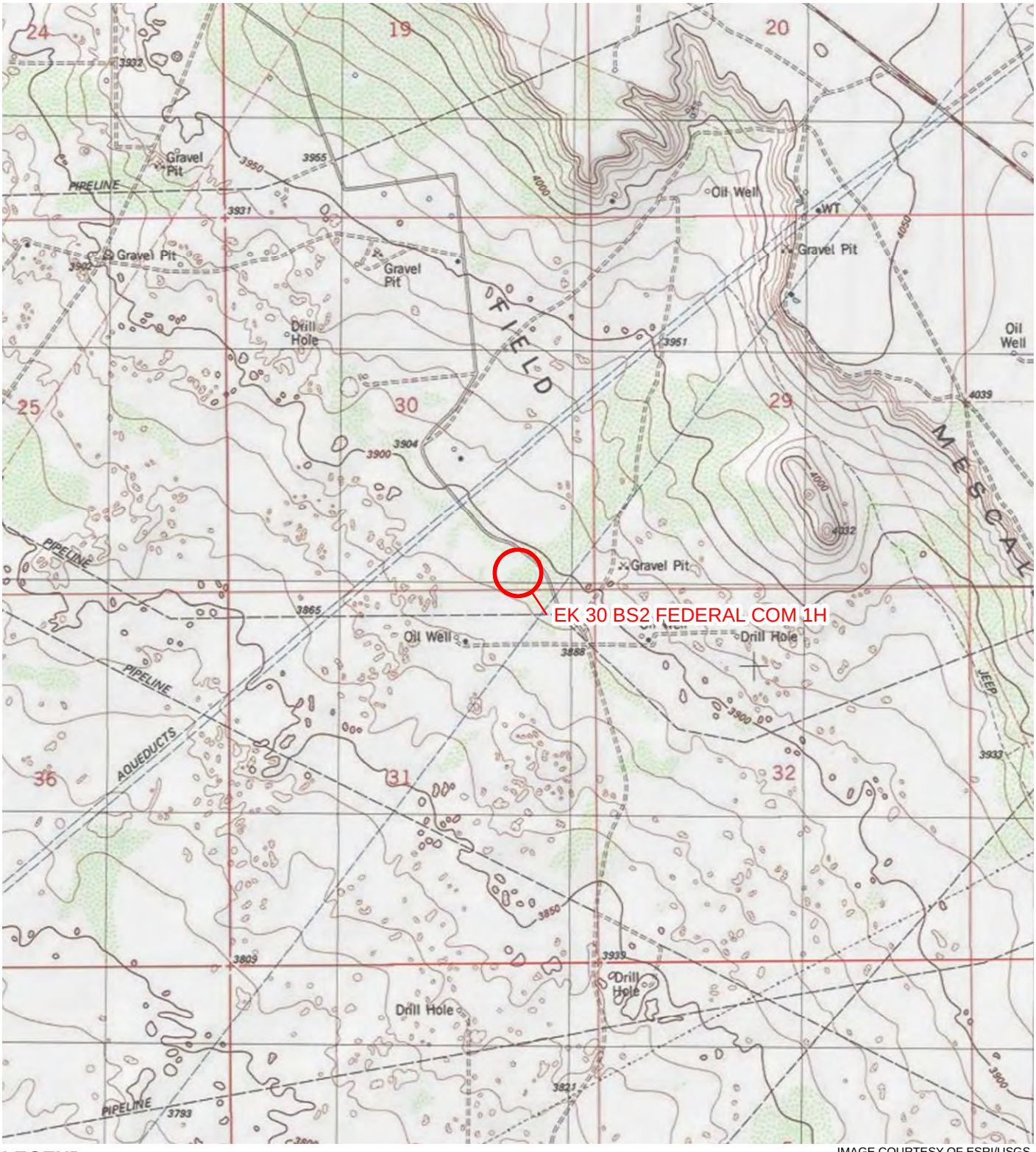

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
EK 30 BS2 FEDERAL COM 1H
SESE SEC 30 T18S R34E
LEA COUNTY, NEW MEXICO
MCELVAIN OIL AND GAS PROPERTIES, INC.

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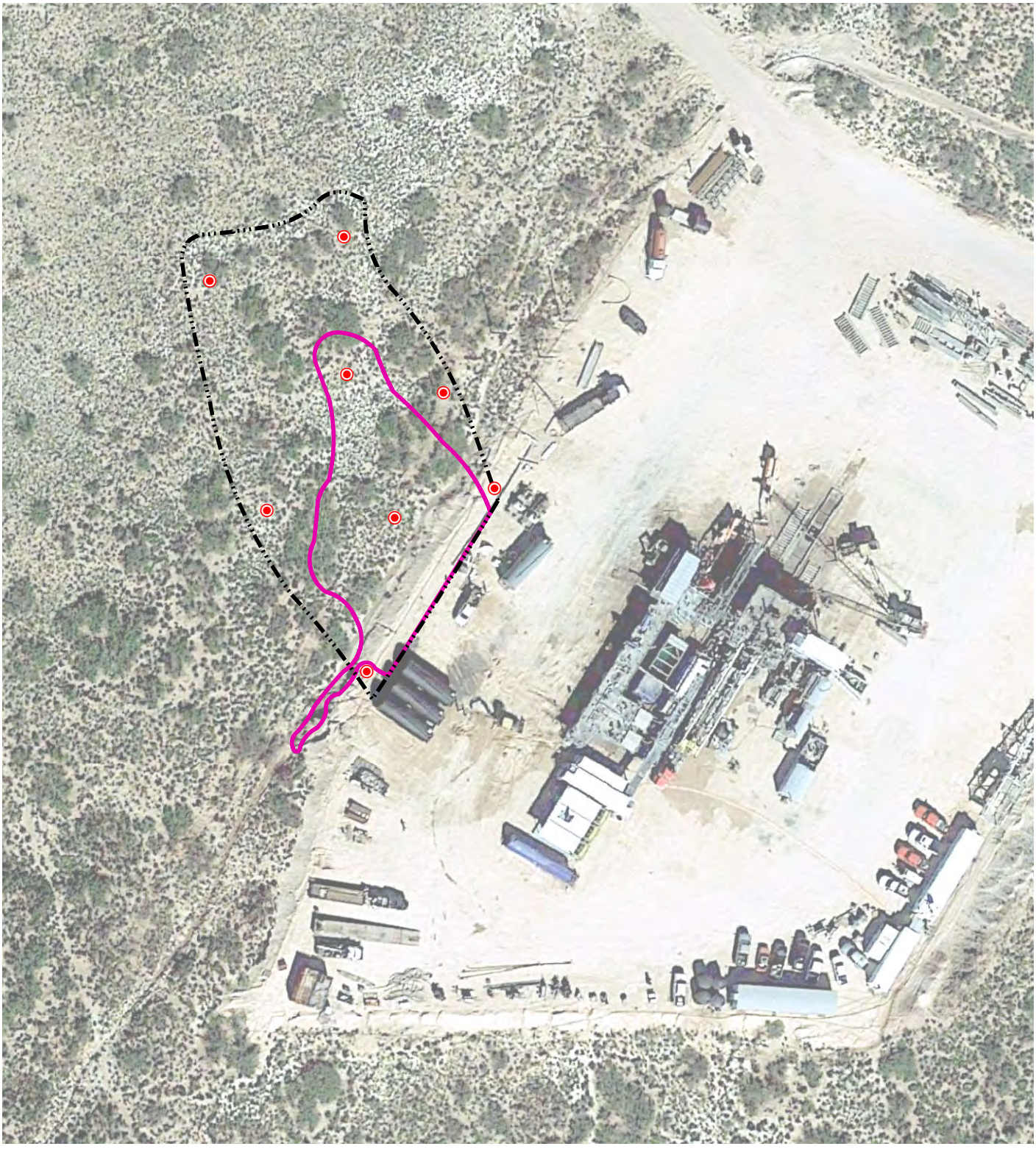

LEGEND

- PROPOSED SAMPLE LOCATION
- SOIL STAINED AREA
- VEGETATION SPRAY AREA

IMAGE COURTESY OF GOOGLE EARTH 2017

0 80 160

Feet

N

FIGURE 2
SPILL AREA MAP
EK 30 BS2 FEDERAL COM 1H
SESE SEC 30 T18S R34E
LEA COUNTY, NEW MEXICO
MCELVAIN OIL AND GAS PROPERTIES, INC.

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