



April 18, 2018

Ms. Crystal Weaver/Mr. Mike Bratcher
New Mexico Oil Conservation Division – District 2
811 S. First Street
Artesia, NM 88210

**RE: Site Characterization and Remediation Work Plan
Darner 9 State #2 Facility
Eddy County, New Mexico
NMOCD Case Number – 2RP-4381**

Ms. Weaver/Mr. Bratcher:

WSP USA, Inc. (WSP) was engaged by Percussion Petroleum, LLC (Percussion) to perform site characterization and remediation services at the Darner 9 State #2 facility in Eddy County, New Mexico (Figure 1).

Incident Description

On September 8, 2017 approximately 507 barrels of produced water was released to the Darner 9 State #2 battery and approximately 505 barrels was recovered via vacuum truck. The release was held by the lined secondary containment and no holes were noted in the containment. The incident was reported to Mr. Mike Bratcher and Ms. Crystal Weaver via email at 9:53 AM Mountain Standard Time on September 8, 2017 and a C-141 was submitted on September 8, 2017. This previous incident by the former operator, Cimarex Energy, was not completed to the satisfaction of the New Mexico Oil Conservation Division (NMOCD). The NMOCD requested full removal of fill material and a full liner inspection with a full record of validation.

Action Taken

Percussion was not the operator at the time of the spill and has not taken additional actions at this time.

Background Information

The Darner 9 State #2 facility is located 18 miles east of Artesia, New Mexico. The legal location for the site is Section 9, Township 17S, Range 29E in Eddy County, New Mexico. The attached Figure 1 depicts the facility's location. According to the United States Department of Agricultural, Natural Resource Conservation Service,

WSP USA
2777 N. Stemmons Freeway
Suite 1600
Dallas, TX 75207

T +1-214-583-3400

wsp.com

Web Soil Survey, the soil in the vicinity of the facility is Reagan loam, 0 to 3 percent slopes. Reagan soils are described as loams. The New Mexico State Engineer's office identified the nearest water well, with groundwater depth information available, to be located in Section 22, Township 17S, Range 259, 1.6 miles to the southeast of the Darner facility. The depth to groundwater was identified at 76 feet below ground surface (bgs). The referenced groundwater data has been included in the appendix.

WSP utilized the NMOCD Guidelines for Remediation of Spills, Leaks and Releases (1993) in preparing this site characterization and remediation work plan. Based on the site inspection the impacts would be classified as Unsaturated Contaminated Soils. Following the ranking criteria in the Guide, WSP identified the facility with a depth to ground water of 76 feet, well head protection area greater than 1,000 feet from a water source and greater than 200 feet from a private domestic water source, and greater than 1,000 feet to a surface body of water, that being Grass Bear Draw. The total score for the facility is 10, the correlating action levels for this ranking score are 10 parts per million (ppm) for benzene, 50 ppm for toluene, ethylbenzene, and total xylenes, and 1,000 ppm for TPH. A chloride level of 600 ppm was used as an action level.

Summary and Conclusion

According to the New Mexico State Engineer's Database groundwater is located between 50 and 100 feet bgs. Based on the depth to groundwater and the presence of a liner, it is unlikely that the impacts will pose a threat to groundwater resources after the proposed remedial actions are complete. In response to the NMOCD's request for a work plan to be submitted, the following remedial activities are proposed:

Proposed Site Characterization and Remedial Actions

- Using a backhoe and hand tools, all soil/gravel will be excavated down to the liner, the storage tanks and production equipment will not be removed.
- Soil and gravel will be field screened and impacted soil/gravel will be hauled away for disposal to an approved landfill, non-impacted soil/gravel will be stockpiled and returned to the containment;
- WSP will inspect the entirety of the liner for signs of wear or holes that could have allowed impacts to the soil beneath the liner. All holes, if any, will be marked with spray paint;
- Where holes in the liner are identified WSP will cut a large enough hole to inspect the subsurface and collect soil samples. Utilizing a hand auger, soil samples will be collected to define the horizontal and vertical impacts, if any;
- If soil samples indicate levels above the designated NMOCD action levels, the soil will be excavated, hauled away for disposal, and backfilled with clean soil;
- Per the 1993 Sampling Guidelines, Section III B, Percussion proposes to determine the final soil contaminant concentrations after remediation per collection of confirmation samples. Following the receipt of analytical results identifying all levels of contaminants below the designated NMOCD action levels, any identified holes in the liner will be patched;
- The liner will be spray washed and the water collected and sent to the on-site produced water tank for disposal. New gravel will be placed on the liner and the berm walls reconstructed, if required;

- A final report documenting all field activities and lab reports from the confirmation sampling will be provided to the NMOCD Artesia Office demonstrating that all remedial requirements have been achieved

If you have any questions or require additional information concerning the proposed plan of action please contact me at (214) 561-7424 (office) or (817) 713-0262 (cell).

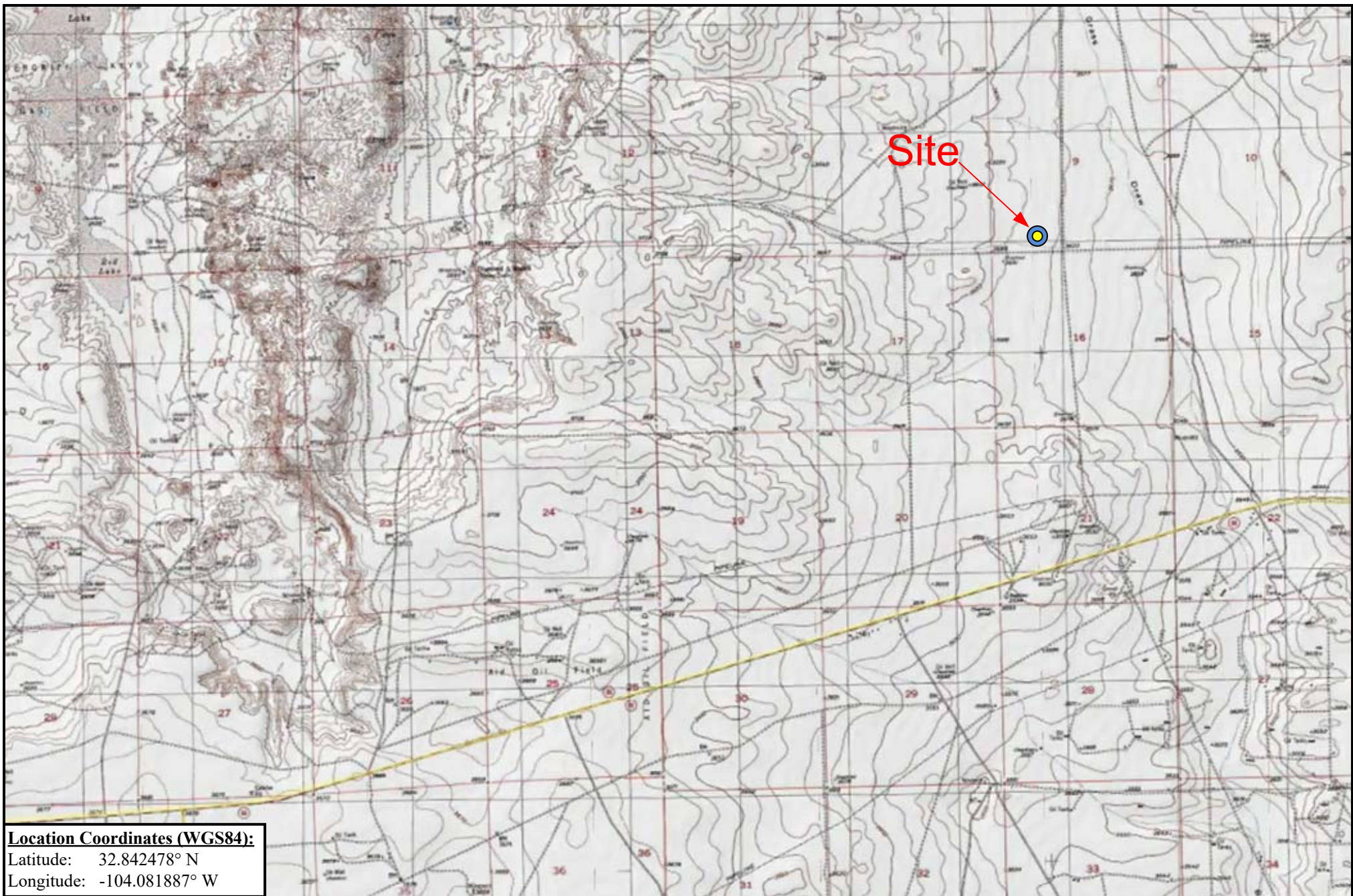
Sincerely,



Matthew Boyle
Sr. Environmental Scientist



Charles D. Harlan, P.G.
Director, Business Development -
Environment



Location Coordinates (WGS84):

Latitude: 32.842478° N

Longitude: -104.081887° W

Percussion Petroleum
Darnier 9 State #2
Eddy County, New Mexico

Legend:

 - Site Location

(Source): Google Earth



(Not to Scale)



Site Location Map

WSP Project#: 31401117.004

4/18/2018

Figure 1