

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 #1 Facility Eddy County, New Mexico NMOCD Case Number – 2RP-4676

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 #1 facility in Eddy County, New Mexico (Figure 1).

Incident Description

On March 16, 2018 approximately 100 barrels of crude oil was released from the Darner 9 State #1 battery and approximately 50 barrels was recovered. A check flapper valve malfunctioned on a heater treater and one oil tank was overfilled causing spillage from the top of the tank through the thief hatch, the release stayed within the containment berm. The incident was reported to Mr. Gilbert Cordero at 6:15 AM Mountain Standard Time on March 17, 2018 and a C-141 was submitted on March 20, 2018. Previous incidents by the former operator, Cimarex Energy, were not completed to the satisfaction of the New Mexico Oil Conservation Division (NMOCD).

Action Taken

Percussion's initial response included utilizing a vacuum truck to remove free fluids and scraping the top layer of soil/gravel with a backhoe and stockpiled on site. The soil will be disposed of in accordance with local, state, and federal regulations. Due to the facility having a liner, no soil samples were collected at this time.

Background Information

The Darner 9 State #1 facility is located 18 miles east of Artesia, New Mexico. The legal location for the site is

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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, 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.
- Excavated soil/gravel will be hauled away for disposal to an approved landfill;
- 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 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 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,

Math Abyl

Matthew Boyle Sr. Environmental Scientist

Charles D. Harlan

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

