R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Since 1996
Durango, Co ▲ Carlsbad, NM ▲ Hobbs, NM

July 28, 2020

NMOCD - District 2
Mr. Mike Bratcher
811 S. First St.
Artesia, NM 88210

RE: Curry Comb Booster Release, NRM2005744201
UL "F" & "K", Sec. 4; T19S. R28E. 32.6890225, -104.181389 (NAD83)

Dear Mr. Bratcher

On behalf of Ray Westall Operating (RWO), R.T. Hicks is pleased to submit the attached C-141. The first submission attached to this letter is the Release Notification and the Site Assessment/Characterization. The Remediation Plan is a separate document.

These two submissions are a complete re-write of the January 2020 submission via the OCD portal. It is also a revision to an April 1, 2019 report on this release written by Lowry Environmental. RWO initially thought that Lowry submitted a C-141 to OCD for this release. Instead, Lowry submitted this report on the findings to the Ryan Mann of the State Land Office (Hobbs) on or about April 11, 2019. It is our intent our two submissions combined with an aggressive schedule to complete in-situ remediation will bring this site into compliance. This plan is copied to the State Land Office (Mr. Mann) and COG Operating, the owners of the surface upon which the release occurred.

The data are summarized below

- The stratigraphy of the soil horizon is
  - 0-6 inches is the A Horizon of soil composed of small caliche clasts, fine sand and silt with some clay.
  - 6-18 inches is the B Horizon that is composed of large caliche clasts intermixed with about 20-40% fine sand, silt and clay
  - The top of an extremely hard, well-indurated caliche layer lies at 6-18 inches below surface. This horizon cannot be easily removed with a backhoe
  - Beneath the 12-18-inch-thick indurated caliche layer is a sand layer from about 36- to about 48-inches below surface
- Laboratory analyses did not detect regulated hydrocarbons above Rule 29 closure criteria
- April 2019 samples from trenches excavated in the center line of the release footprint show chloride concentrations
  - 100-5000 mg/kg at 36 inches below surface
  - 100-3200 mg/kg at 48 inches below surface
- June 2020 samples of A and B soil horizons in the center line of the release footprint document chloride concentrations of
  - >20,000 mg/kg for the A horizon (surface to less than 6-inches deep)
  - 4000-8000 mg/kg for the B horizon (6-18 inches deep)

- Using the 2019 data in a mass balance calculation we estimate the release volume is greater than 300 bbls
- The surface area of the release is nearly 3000 square yards and has impacted land owned by the State of New Mexico and COG Operating
- Groundwater data from wells and borings and an examination of the geology of the area permit two conclusions that exhibit a high degree of scientific certainty:
    - No perched groundwater zone exists beneath the release site
    - The uppermost water-bearing unit exhibits a potentiometric surface that is about 200 feet below land surface
- We retained Dr. Kerry Sublette to assist us with interpretation of analysis of samples for agricultural/soil remediation constituents and development of the remedy, which is described in Section 3 of the C-141 Submission.
- Because we propose an in-situ, soil flushing remedy, we believe it is important to understand the site-specific lithology. Therefore, as part of the remedy, we propose to install an auger boring to collect and evaluate samples at depth and to provide evidence to support or negate our conclusion that a water table groundwater zone does not exist at this site.

The proposed remedy is described in the next submission and basically consists of the following work elements

1. Tilling hay into the A and B soil horizons (average depth is 8-inches)
2. Adding agricultural gypsum to the soil as recommended by Dr. Sublette based upon sampling results.
3. Adding fresh water to soil after rainfall events to enhance the flushing of salt from the topsoil and underlying caliche and sand layers.
4. Routine monitoring of rainfall events, total additional irrigation water, soil moisture, salt content of the soil stockpile (A and B horizons) and underlying caliche and sand layers.

We plan to commence the soil flushing remedy as soon as possible, potentially prior to NMOCD approval in order to take advantage of future monsoon rains. Thank you for your attention to this matter and we look forward to working with you and your staff to gain approval of an in-situ remedy.

Sincerely,
R.T. Hicks Consultants

Randall T. Hicks]
Principal

Copy – Ryan Mann, State Land Office
Ike Tavarez, COG Operating
Dr. Kerry Sublette
Ray Westall Operating