

R. T. HICKS CONSULTANTS, LTD.

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Artesia ▲ Carlsbad ▲ Durango ▲ Midland

April 9, 2018

Ms. Crystal Weaver, Mr. Mike Bratcher
NMOCD District 2
811 S. First Street
Artesia, New Mexico 88210
VIA EMAIL

Ms. Shelly Tucker
Bureau of Land Management
620 E. Greene Street
Carlsbad, New Mexico 88220
VIA EMAIL

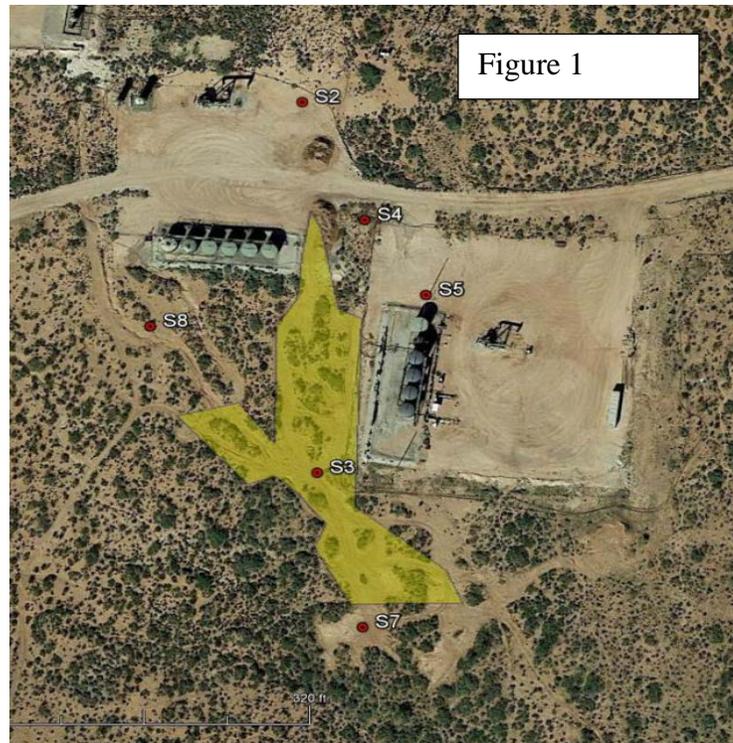
RE: Delineation Plan **2RP-4251**
Chi Operating – Benson Delaware Unit #6 Battery (32.67997°, -103.93143°)

Dear Ms. Weaver, Ms. Tucker, and Mr. Bratcher:

On behalf of Chi Operating, Inc. (operator), Hicks Consultants submits this delineation plan to BLM and OCD for the release at the BDU #6 battery location (Site) that occurred on May 28, 2017. An archaeological survey has been completed for the off-location Site.

Depth to groundwater surface at the Site is approximately 295 feet. Figure 1 displays the approximate outline of the off-location footprint of the crude spill at the Site where the initial characterization last year identified total petroleum hydrocarbon concentrations greater than OCD's guideline limit of 5,000 mg/kg¹. This 2017 Google Earth image should be compared to a previously-submitted Plate 3 (attached) that identified the entire release footprint and sample locations.

We propose the following plan to complete vertical delineation of TPH as requested by OCD and BLM in order to adequately characterize the release with the aim to develop a corrective action plan.



Completion of Delineation

1. Complete the delineation of the vertical extent of impact above 5,000 mg/kg TPH by collecting samples at S-3, S-4 and S-5 at
 - a. previously-sampled depths of 0-6 inches, and 8-14 inches and 2-feet
 - b. un-sampled depths of 4-feet and 7-feet
 - c. If field observations suggest delineation to greater depths is warranted, the Chi representative may cause additional sampling as needed.

¹ http://www.emnrd.state.nm.us/OCD/documents/7C_spill1.pdf

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2. Submit samples from each location to the laboratory for analysis of GRO+DRO+DROext (TPH).
3. Within 15-25 days after laboratory reports from this event are received, present the results to BLM and OCD with specific recommendations for the Corrective Action.

Additional Delineation for Chloride

Samples will be collected at locations S2 and S5 to a total depth of 4-feet at 1-foot increments and evaluated for chloride.

Initial Remediation of Stockpiles

We request authorization to commence remediation by the following method:

- A. Install a liner on a portion of the BDU 20 location, which is bermed to prevent off-site run off of storm water and has sufficient room to allow for initial remediation.
- B. Place all of the earth in the north and south stockpiles onto the liner in a 1- to 2-foot layer
- C. Collect two 5-point composite samples of the material and report the results with proposed Corrective Action identified in #3, above.

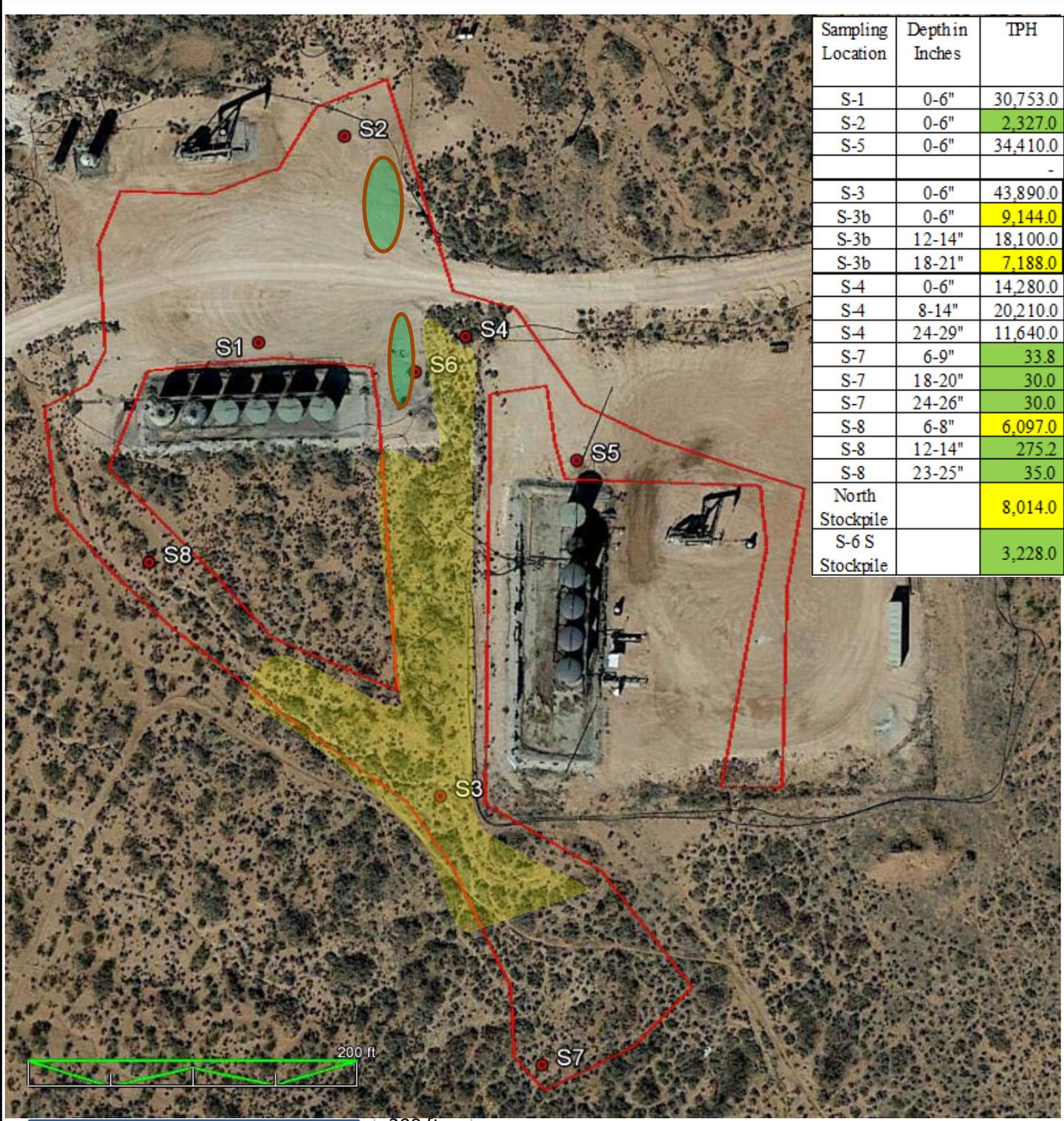
Thank you for your consideration of this Delineation Plan and your help regarding this project. Chi is prepared to commence work in April pending approval of the proposed moving of the stockpiles. Chi will notify BLM and OCD via email with the specific sampling date

Sincerely,
R.T. Hicks Consultants



Randall Hicks
Principal

Enclosures: Plate 3, Table 1
Copy: Chi Operating, Kristin Pope



Sampling Location	Depth in Inches	TPH
S-1	0-6"	30,753.0
S-2	0-6"	2,327.0
S-5	0-6"	34,410.0
		-
S-3	0-6"	43,890.0
S-3b	0-6"	9,144.0
S-3b	12-14"	18,100.0
S-3b	18-21"	7,188.0
S-4	0-6"	14,280.0
S-4	8-14"	20,210.0
S-4	24-29"	11,640.0
S-7	6-9"	33.8
S-7	18-20"	30.0
S-7	24-26"	30.0
S-8	6-8"	6,097.0
S-8	12-14"	275.2
S-8	23-25"	35.0
North Stockpile		8,014.0
S-6 S Stockpile		3,228.0



Release footprint is red outline
 Sample locations and labels

 Soil stockpiles from initial response

R. T. Hicks
 Consultants

Release Footprint on Google Image
 Chi Operating - BDU 6 Battery

Plate 3
 Oct-17

Table 1 - Laboratory Results, Location, and Date of Sampling

Sample Location	Depth (in.)	Chloride	GRO	DRO	Ext. DRO	Total TPH	BTEX	Benzene	Sample Date	Latitude/Longitude Coordinates
S-1	0-6	192.0	443.0	24,600.0	5,710.0	30,753.0	4.4	<0.200	8/29/2017	32.67997, -103.93143
S-2	0-6	3880.0	<50.0	1,780.0	497.0	2,327.0	0.3	<0.050	8/29/2017	32.68032, -103.93126
S-5	0-6	2320.0	1,190.0	27,400.0	5,820.0	34,410.0	31.1	<0.500	8/29/2017	32.67977, -103.93080
						-				
S-3	0-6	32.0	6,540.0	31,700.0	5,650.0	43,890.0	174.0	<5.00	8/29/2017	32.67920, -103.93107
S-3b	0-6	16.0	324.0	7,240.0	1,580.0	9,144.0	<0.300	<0.050	9/20/2017	
S-3b	12-14	32.0	3,590.0	12,400.0	2,110.0	18,100.0			9/20/2017	
S-3b	18-21	48.0	428.0	5,390.0	1,370.0	7,188.0	5.5	<0.050	9/20/2017	
S-4	0-6	32.0	2,070.0	10,200.0	2,010.0	14,280.0	5.6	<0.050	8/29/2017	32.67998, -103.93102
S-4	8-14	<16.0	5,700.0	12,400.0	2,110.0	20,210.0	127.0	<2.00	9/20/2017	
S-4	24-29	<16.0	3,650.0	6,850.0	1,140.0	11,640.0	126.0	<2.00	9/20/2017	
S-7	6-9	<16.0	<10.0	13.8	<10.0	<33.8			9/20/2017	32.678744, -103.930869
S-7	18-20	<16.0	<10.0	<10.0	<10.0	<30			9/20/2017	
S-7	24-26	<16.0	<10.0	<10.0	<10.0	<30			9/20/2017	
S-8	6-8	16.0	993.0	4,270.0	834.0	6,097.0			9/20/2017	32.679597, -103.931647
S-8	12-14	16.0	11.4	204.0	59.8	275.2			9/20/2017	
S-8	23-25	<16.0	<10.0	15.0	<10.0	<35			9/20/2017	
North Stockpile		112.0	284.0	6,420.0	1,310.0	8,014.0	1.7	<0.050	9/20/2017	
S-6 S Stockpile		144.0	130.0	2,570.0	528.0	3,228.0	<0.300	<0.050	8/29/2017	32.67992, -103.93112