Souder, Miller & Associates ♦ 201 S. Halagueno ♦ Carlsbad, NM 88221
(575) 689-7040

December 10, 2015

Ana Ramirez
Environmental Specialist II
Key Energy Services, LLC

SUBJECT: PROPOSED SCOPE FOR SITE DELINEATION FOR THE BKE SWD TANK BATTERY AREA
EDDY COUNTY, NEW MEXICO

Dear Ms. Ramirez:

Souder, Miller & Associates (SMA) is pleased to submit this proposed scope of work and cost estimate to delineate the affected area of the historic battery on the BKE SWD, as requested by the New Mexico Oil Conservation Division (NMOCD). SMA has experienced staff based in the Carlsbad, New Mexico office, within 60 miles of the project site. Our Carlsbad staff is headed by Mr. Austin Weyant who has completed numerous petroleum and brine delineation and remediation projects in the Permian Basin. Mr. Weyant will be supported by Lucas Middleton, also in Carlsbad, and our staff in SMA's Las Cruces and Albuquerque offices. Senior support and QAQC review will be provided by our Farmington office.

For questions or comments pertaining to the assessment or the attached proposal, please feel free to contact me.

Submitted by:

Cynthia Gray, CHMM
Senior Scientist

Souder, Miller & Associates ♦ 201 S. Halagueno ♦ Carlsbad, NM 88221
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PROPOSED SCOPE FOR DELINEATION OF THE HISTORIC BATTERY AT THE BKE SWD

KEY ENERGY SERVICES LLC

BKE SWD
API# 30-015-23493
SECTION 13, T23S R27E, NMPM
EDDY COUNTY, NM

Prepared for:
Key Energy Services LLC
6 Desta Dr. Suite 4300
Midland, TX 79705

Prepared by:
Souder, Miller & Associates
201 S. Halagueno
Carlsbad, NM 88221
575-689-7040

December 10, 2015
SMA Reference
5B24551 BG1

Table of Contents

1.0 Introduction

At the request of Key Energy Services LLC (Key), Souder, Miller & Associates (SMA) has prepared this proposal for the assessment and delineation of the tank battery area at the BKE SWD. The site is located in Section 13, T 23S, R 27 E NMPM, Eddy County, New Mexico. After a document review and contact with the NMOCD Division 1 staff, SMA has prepared a scope to encompass the batteries delineation and un-affected area background sampling requested by the NMOCD.

Two soil borings will be installed, one at the location of the release and one northeast of the location as a background sample. As the borings are advanced, each location will be sampled and field screened every two feet for chlorides. The bottom hole sample and the highest field-screened sample are to be sent to a third party lab for confirmation. Chlorides, TPH, and BTEX are the constituents of concern. The borings will be cased as a temporary sampling point or a temporary monitoring well (TMW), sampled, casing removed, and the hole plugged to surface.

2.0 Permitting and Pre-mobilization

After approval, SMA will prepare and submit a New Mexico Office of the State Engineer (NMOSE) application for non-consumptive use (ANCU) and a NMOSE plugging plan of operations for both soil borings. These permits will prevent any regulatory issues if and when the soil borings come in contact with groundwater.

For waste disposal and to facilitate steam cleaning the boring and sampling equipment, a Lea Land lined roll-off will be delivered to the location. The TMW positions will be marked via white pin flags and an 811 NM call made by SMA's licensed driller.

3.0 Temporary Monitoring Well (TMW) Installation and Sampling

After an 811 follow-up clearance, the background location north of the BKE will be drilled first with the Advance Hollow Stem Auger (HSA) and sampled via split spoon at 5 foot intervals to the top of the suspected water bearing formation or a depth of 38 feet, whichever occurs first. Then SMA will advance the HSA approximately 10 feet into water bearing formation, and install 15 feet of 2 inch schedule 40 0.020 slot screen and enough 2 inch schedule 40 riser to be above the ground surface. As outlined in the NMOSE (ANCU) permit, 17 feet of 12/20 silica sand will be set from total depth to 2 feet above the screened interval and 5 feet of hydrated bentonite chips will be installed above the silica pack. This will insure that any surface runoff will not affect the well and will allow SMA to collect an unbiased ground water sample for the purposes of this investigation. The boring within the affected area will follow the same NMOSE approved steps with a clean set of augers. Both wells will be temporally capped at the end of the first day and all soil samples will be processed and placed in cold storage.

On the second day, both wells will be completed and purged using a GeoTech Georeclaimer. SMA will sample both wells with a clean bailer. Then both wells will be plugged using site-mixed neat cement slurry (5.20 gallons per 94 lb. sack with 2% bentonite additive). The site contours

will be restored and returned to surface grade. The estimated 2 yd^3 of affected soil/drill cuttings and purge water will be hauled for disposal at Lea Land, an NMOCD approved disposal facility.

4.0 Horizontal Delineation of Soils Impacts within the Tank Battery

In conjunction with the soil borings described above, a horizontal delineation within the tank battery will be performed with sampling of up to 10 sample locations in the area to be investigated. Field screening will be performed for both petroleum and chlorides to determine which samples will be submitted for analysis for EPA method 8021B for BTEX, EPA method 8015B for TPH (DRO GRO MRO) and EPA method 300.0 for Chlorides. All samples will be sent under chain-of-custody protocol to AccuTest Laboratories or the laboratory of Key's choice.

5.0 Report Preparation

Upon receipt of laboratory analytical results, a report will be prepared describing the findings of the horizontal delineation as well as the results of the background boring and the boring within the tank battery to determine the vertical extent of the impacts.

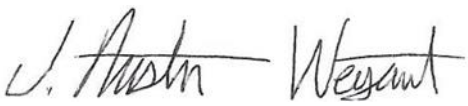
6.0 Cost Proposal

An estimated cost spreadsheet for the proposed scope described above is attached hereto.

If there are any questions regarding this proposed delineation scope and estimated cost, please contact either Austin Weyant at 575-689-7040 or Cindy Gray at 505-325-7535.

Submitted by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant
Project Scientist

Reviewed by:

Cynthia Gray, CHMM
Senior Scientist

ESTIMATED COST PROPOSAL

Souder, Miller & Associates

Professional Services and Expenses Task/Hours/Fee Breakdown

Project Description:	BKE SWD Spill Initial Delineation, **Lab Analytical Costs by Client**
Project Number:	5B24551 BG1
Owner:	Key Energy Services
Contact:	Ana Ramirez
Date of Submittal:	12/9/2015
Tax Rate on Services:	0.074375

Job Description	Principal	Senior Eng./Sur. Mgr. II	Project Eng./Sci. Mgr II	Project Eng./Sci. Mgr I	Staff EIT/Sci. II	Staff EIT/Sci. I	Project Asst. II	Admin II	Admin I	Mileage	Expenses	In House Lump Sum	Total	Sub Contracts
	190	150	120	105	90	80	80	65	45	1	1	1		
Unit	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Mi	Actual	L.S.	$	$
Task														
Project Administration	1						1	1					$207.50	
Client Program, Scope, and File Review		2											$225.00	
Project Management and Coordination		2		3									$540.00	
	1	3	0	3	0	0	1	1	0	0	0	0	$972.50	
Subtotal Cost:	95	450	0	315	0	0	80	33	0	0	0	$0.00	$972.50	
Negotiate scope with Client and NMOCD Hydrogeologist. Prepare and Submit Work Plan to NMOCD and NMOSE Permitting		5		3		3						$375.00	$1,680.00	
Pre-Mobilization Whiteline both Temporary Monitor Well (TMW) locations with lathe and flagging for NM811 2-days prior to drilling activities.,Heath and Safety Plan				2		3				50			$477.75	$0.00
(TMW) installation, Soil Delineation, documentation, and equipment decon. Lab analysis cost not included. By Client				2		8				50	516		$1,393.75	$7,393.12
Develop wells, Purge and water sample collection (Lab analytical cost not included) P&A of both temporary wells				2		8				50	45		$922.75	$0.00
Evaluate lab results. Prep Assessment Report and cover letter				2		4							$530.00	$0.00
Senior Review of Assessment Report and figures	1	1		1									$350.00	$0.00
													$0.00	$0.00
In-House Quality Control		1											$150.00	
	1	7	0	12	0	26	0	0	0	150	561	375	$5,504.25	
Subtotal Cost:	95	1050	0	1260	0	2080	0	0	0	83	561	$375.00	$5,504.25	$7,393.12
	1	10	0	15	0	26	1	1	0	150	561	375		
Total Estimated Cost	190	1500	0	1575	0	2080	80	33	0	83	561	$375.00	$13,869.87	
NMGRT of 7.4375%								New Mexico Gross Receipts Tax			0.074375		$1,031.57	
Total estimated cost with tax								Estimated Project Total					$14,901.44	