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REPORTS

DATE:

10/16/2000

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TO: William C. Olson

WITH: New Mexico Oil Conservation Division
Santa Fe, New Mexico

FAX: (505) 827-8177

DATE: October 16, 2000

FROM: Mark J Larson

WITH: LARSON & Associates, Inc.
Midland, Texas

PAGES: 12 (Includes Cover)

RE: Preliminary Report and Request to Close Excavation, Texaco
Exploration and Production Inc., J.R. Phillips #2 Tank Battery, Lea
County, New Mexico

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October 16, 2000

Via Facsimile: (505) 827-8177

Mr. William C. Olson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: Preliminary Report and Request to Close Excavation, Texaco Exploration and Production Inc., J.R. Phillips Tank Battery No. 2, SE/4, NW/4, Section 6, Township 20 South, Range 37 East, Lea County, New Mexico

Dear Mr. Olson:

On September 28, 2000, LARSON and Associates, Inc. (LA), on behalf of Texaco Exploration and Production Inc. (Texaco), submitted a letter to the New Mexico Oil Conservation Division (NMOCD) requesting approval to close an excavation at the above-referenced location (Site). The Site is a former oilfield tank battery location once operated by Texaco, and located in the southeast quarter (SE/4) of the northwest quarter (NW/4) of Section 6, Township 20 South, Range 37 East, Lea County, New Mexico. Figure 1 presents a Site location and topographic map.

The September 28, 2000 letter presented the preliminary results of laboratory analyses of soil samples collected by LA personnel on August 17, 2000 and September 15, 2000. Additional analyses were pending at the time the letter was issued, however, during a telephone conversation on September 29, 2000, you requested that additional soil be excavated to reduce total petroleum hydrocarbon (TPH) concentrations at the bottom and southwest corner (sample B-5), and the west wall (sample W-2) of the main excavation. This letter presents the initial sample results, and results from soil samples following excavation of additional soil.

Background

In December 1999, Texaco initiated reclamation activities at the Site that included excavating and hauling TPH affected soil from the Site to its centralized facility (landfarm), located northwest of Jal, New Mexico. The excavated area includes a main excavation, and satellite excavation. The main excavation is located east of the current J.R. Phillips #2 Battery location, and the satellite excavation is a former burn pit located southeast of the main excavation. The main excavation extends to approximately 25 to 30 feet below ground surface (BGS). The satellite excavation was excavated to approximately 12 to 15 feet BGS.

Mr. William C. Olson
October 16, 2000
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A test trench was excavated below the bottom of the main excavation near the northwest corner to evaluate residual hydrocarbon and chloride concentrations in soil, and observe depth-to-groundwater. Groundwater was observed approximately 10 feet below the bottom of the main excavation, or 35 to 40 feet BGS. LA personnel collected composite soil samples from the test trench on August 17, 2000. Three to four grab samples were collected from each wall to form a composite sample. The samples were transferred under chain-of-custody control to Trace Analysis, Inc., located in Lubbock, Texas. The samples were analyzed for chloride and TPH. The east wall sample was also analyzed for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) since the photoionization detector (PID) recorded a concentration of ionizable hydrocarbons above 100 parts per million (ppm). Figure 2 presents a Site drawing and approximate location of the test trench. Table 1 presents a summary of the laboratory analyses. Appendix A presents the laboratory report.

On September 15, 2000, LA personnel collected composite soil samples from the walls and bottom of the main excavation, and the satellite excavation. Two to four composite samples were collected from each wall, and five composite samples were collected from the bottom of the main excavation. Two composite samples (SP-1 and SP-2) were collected from the north and south sides of the wedge-shape satellite excavation. Each composite sample consisted of five grab samples. The samples were submitted under chain-of-custody control to Trace Analysis, Inc., and analyzed for TPH and chloride. Samples from the west wall (W-1) and bottom of the main excavation (B-3, B-4 and B-5) were also analyzed for BTEX, since PID readings exceeded 100 ppm. Figures 3 through 5 present the sample locations. Table 1 presents a summary of the laboratory analyses. Appendix A presents the laboratory reports.

Following a telephone conversation on September 29, 2000, the NMOCD requested that additional soil be excavated from the bottom and west wall of the main excavation at sample locations B-5 and W-2, respectively. Approximately 40 cubic yards of additional soil was excavated and removed on October 3, 2000, and included some soil from the north end of the west wall (location W-3). The additional soil was hauled to Texaco's landfarm. Soil samples were collected from the excavated areas, submitted under chain-of-custody control to Trace Analysis, Inc., and analyzed for TPH. Sample B-5 was also analyzed for BTEX since the PID recorded a reading above 100 ppm. Table 1 presents a summary of the analyses. Appendix A presents the laboratory reports.

Referring to Table 1, the TPH concentrations in the test trench samples ranged from 54 milligrams per kilogram (mg/kg) in the south wall sample, to 113 mg/kg in the east wall sample. Xylene was the only volatile organic parameter that was detected in the east wall sample, and was reported at 0.057 mg/kg. Chloride concentrations ranged from 26 mg/kg (south wall) to 220 mg/kg (east wall). The TPH concentrations in samples from the main excavation ranged from less than the test method detection limit of 55 mg/kg (sample W-4) to 2342 mg/kg in sample B-5. The TPH concentration in samples B-5, W-2

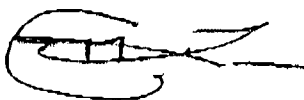
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and W-3 were reduced to 566 mg/kg, 1050 mg/kg and 72 mg/kg, respectively, following excavation of additional soil on October 3, 2000. The highest total BTEX concentration was reported in sample B-5 on September 15, 2000 (4.28 mg/kg). However, the concentration of total BTEX in the bottom of the southwest corner of the main excavation was reduced to 0.333 mg/kg following removal of additional soil on October 3, 2000. Chloride concentration in samples from the main excavation ranged from 20 mg/kg in sample B-3 to 1100 mg/kg in sample W-4.

In conclusion, benzene and total BTEX were below the NMOCD recommended remediation action level (RRAL) of 10 mg/kg and 50 mg/kg, respectively. The concentration of TPH in soil samples from the bottom of the main excavation (B-1 through B-5), test trench, and satellite excavation samples were below the NMOCD RRAL of 1000 mg/kg. Chloride concentrations in samples from the bottom of the main excavation and test trench were reported below 250 mg/kg, which the NMOCD has used as a general cleanup level for soil.

Texaco requests permission to fill the excavations with clean soil, and place a compacted clay cover, approximately 2 feet thick, over the Site. The clay cover will be compacted to 95% proctor density to reduce infiltration of precipitation. Approximately 2 feet of clean soil will be placed over the cap and seeded to grass. Texaco will present the complete investigation results, including analyses of groundwater samples from monitoring and water wells, in a comprehensive report to the NMOCD. The report will be compiled following receipt of the final laboratory reports. Your expeditious approval to fill the excavation is requested. Please call Mr. Rodney Bailey at (915) 688-2971 or my self at (915) 687-0901 if you have questions.

Sincerely,
LARSON & Associates, Inc.



Mark J. Larson, CPG, CGWP
President

cc: Rodney Bailey

Encl.

TABLES

Table 1: Summary of BTEX, TPH and Chloride Analyses of Soil Samples

Texaco Exploration and Production, Inc.

J.R. Phillips Tank Battery No. 2

SE/4, NW/4, Section 6, Township 20 South, Range 37 East

Lea County, New Mexico

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Sample Number	Sample Date	Chloride (mg/kg)	GRO (mg/kg)	BEO (mg/kg)	TPH (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)
Area: Main Excavation										
N-1	15-Sept-00	920	<5	95	95	-	-	-	-	-
N-2	15-Sept-00	590	<5	178	178	-	-	-	-	-
S-1	15-Sept-00	230	<5	55	55	-	-	-	-	-
S-2	15-Sept-00	750	<5	63	63	-	-	-	-	-
E-1	15-Sept-00	78	<5	89	89	-	-	-	-	-
E-2	15-Sept-00	59	<5	128	128	-	-	-	-	-
W-1	15-Sept-00	120	<5	89	89	<0.05	<0.05	<0.05	<0.05	<0.2
W-2	15-Sept-00	250	865	627	1292	<0.05	<0.05	0.264	0.947	1.211
	03-Oct-00	-	<5	1050	1050	-	-	-	-	-
W-3	15-Sept-00	210	630	313	943	<0.05	<0.05	0.260	1.01	1.27
	03-Oct-00	-	<5	72	72	-	-	-	-	-
W-4	15-Sept-00	1100	<5	<50	<55	-	-	-	-	-
B-1	15-Sept-00	200	<5	268	268	-	-	-	-	-
B-2	15-Sept-00	27	366	136	502	-	-	-	-	-
B-3	15-Sept-00	20	<5	269	269	<0.05	<0.05	<0.05	0.867	0.867
B-4	15-Sept-00	68	<5	487	487	<0.05	<0.05	<0.05	1.12	1.12
B-5	15-Sept-00	67	502	1840	2342	<0.1	<0.1	1.04	3.24	4.28
	03-Oct-00	-	<5	566	566	<0.05	<0.05	0.106	0.227	0.333
Area: Satellite Excavation (Southeast of Main Excavation)										
SP-1	15-Sept-00	2600	<5	162	162	-	-	-	-	-
SP-2	15-Sept-00	3700	<5	53	53	-	-	-	-	-
Area: Test Trench (Near Northwest Corner of Main Excavation)										
N. Wall	17-Aug-00	38	<5	85	85	-	-	-	-	-
S. Wall	17-Aug-00	26	<5	54	54	-	-	-	-	-
E. Wall	17-Aug-00	220	<5	113	113	<0.05	<0.05	<0.05	0.057	0.057
W. Wall	17-Aug-00	60	<5	93	93	-	-	-	-	-

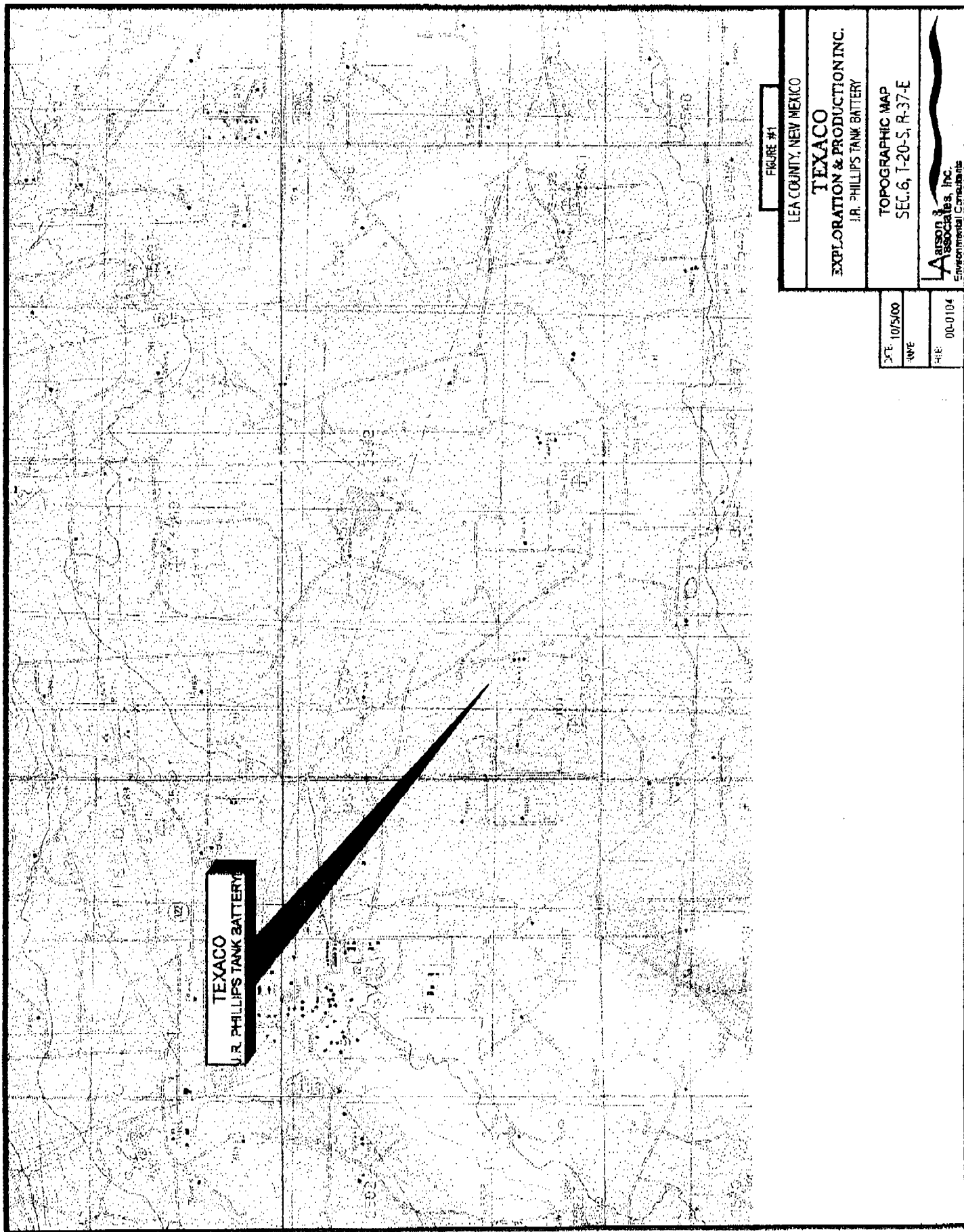
Notes: Analyses performed by Trace Analysis, Inc., Lubbock, Texas

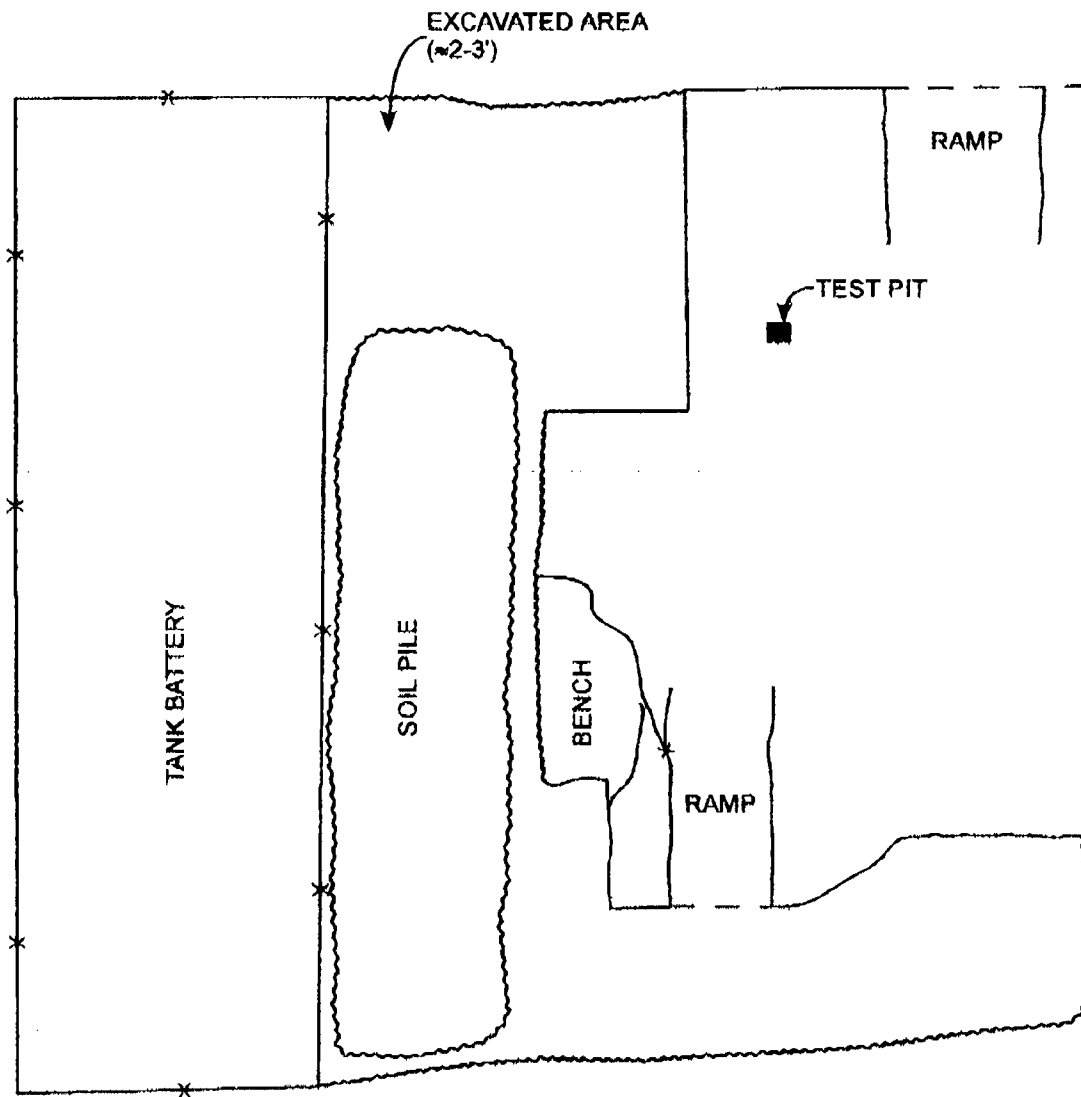
1. mg/kg: Concentration in milligrams per kilogram

2. <: Analyte not detected at test method detection limit.

3. -: No data available

FIGURES





Scale: 1"=50'

FIGURE #2

LEA COUNTY, NEW MEXICO

TEXACO
EXPLORATION & PRODUCTION INC.
J.R. PHILLIPS TANK BATTERY

SITE DRAWING

DATE: 10/5/00

NAME:

FILE: 00-0104

Larson & Associates, Inc.
Environmental Consultants

