1R - 393

REPORTS

DATE:

2005

Saga Petroleum LLC
Apollo SWD
Work Plan
Section 1, Township 17S, Range 36E
Lea County, New Mexico

May 17, 2005

Prepared for:

Saga Petroleum LLC
415 W. Wall, Suite 1900
Midland, Texas 79701

By:

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

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I. Background

Safety & Environmental Solutions, Inc. (SESI) was contracted by Saga Petroleum LLC to perform a site investigation of the Apollo Salt Water Disposal Facility located in Lea County, New Mexico. The subject area is located in Section 1, Township 17S, Range 36E in Lea County, New Mexico. (See Figure 1) The initial investigation included the installation of 3 boreholes inside the diked area after removal of the tanks. The results of investigation were reported in the Site Investigation report dated January 21, 2004.

This facility is situated approximately 450 feet north of a City of Lovington water well. A groundwater monitoring well was installed on January 28, 2004 approximately 16' south of borehole # 3 and just outside the berm. This monitor well is directly between the facility and the City of Lovington water well. The results of the initial sampling indicated no chlorides or BTEX have reached the groundwater. The monitor well was sampled on April 7, 2005, with the same results.

The area adjacent to the subject facility to the west has been excavated to a depth of 6' to 8' and the most heavily contaminated soils above 1000 ppm were transported to Sundance Services for disposal. The soil transported for disposal was contaminated with hydrocarbons and not chlorides. Four samples were taken in the bottom of the excavation with results ranging from <10 ppm to 1260 ppm TPH. The chloride level in these samples was less than 100 ppm. The excavation was backfilled with clean caliche from off-site. Approximately 800 cubic yards of caliche with TPH concentrations of <1000 ppm was transported to the location of injection well # 23 and spread to be used in the construction of a new facility.

II. Surface and Ground Water

According to the database provided by the New Mexico State Engineer's Office groundwater of record in Section 1, Township 17S, Range 36 E, in Lea County, New Mexico is approximately 83 feet in depth. The monitor well installed at this site indicated that the top of the water is 92.04' bgs.

III. Soils

The surface soils in the area are predominantly sand and sandy loam.

IV. Action Plan

The existing facility will be moved to the northwest approximately ¼ mile and rebuilt adjacent to the injection well #23. The new facility will use the existing fiberglass tank along with new tanks to provide adequate storage at the facility. The new facility will be bermed to the correct height and all ground surface inside as well as the berm will be covered with a 60 mil plastic liner. All equipment and piping inside the bermed area will be above the liner to prevent any releases from contaminating the ground surface.

Once the facility has been relocated, the area inside the berm of the existing facility will be excavated until representative samples of the sidewalls and bottom indicate the TPH levels are below 1000 ppm. All contaminated soil removed will be transported to an approved NMOCD disposal or landfarm facility. A 40 mil plastic liner will be placed in

the bottom of the excavation to protect any chloride contamination left in place from any downward movement of fluids through the soil column. The excavation will be backfilled with clean caliche from off-site and returned to normal grade.

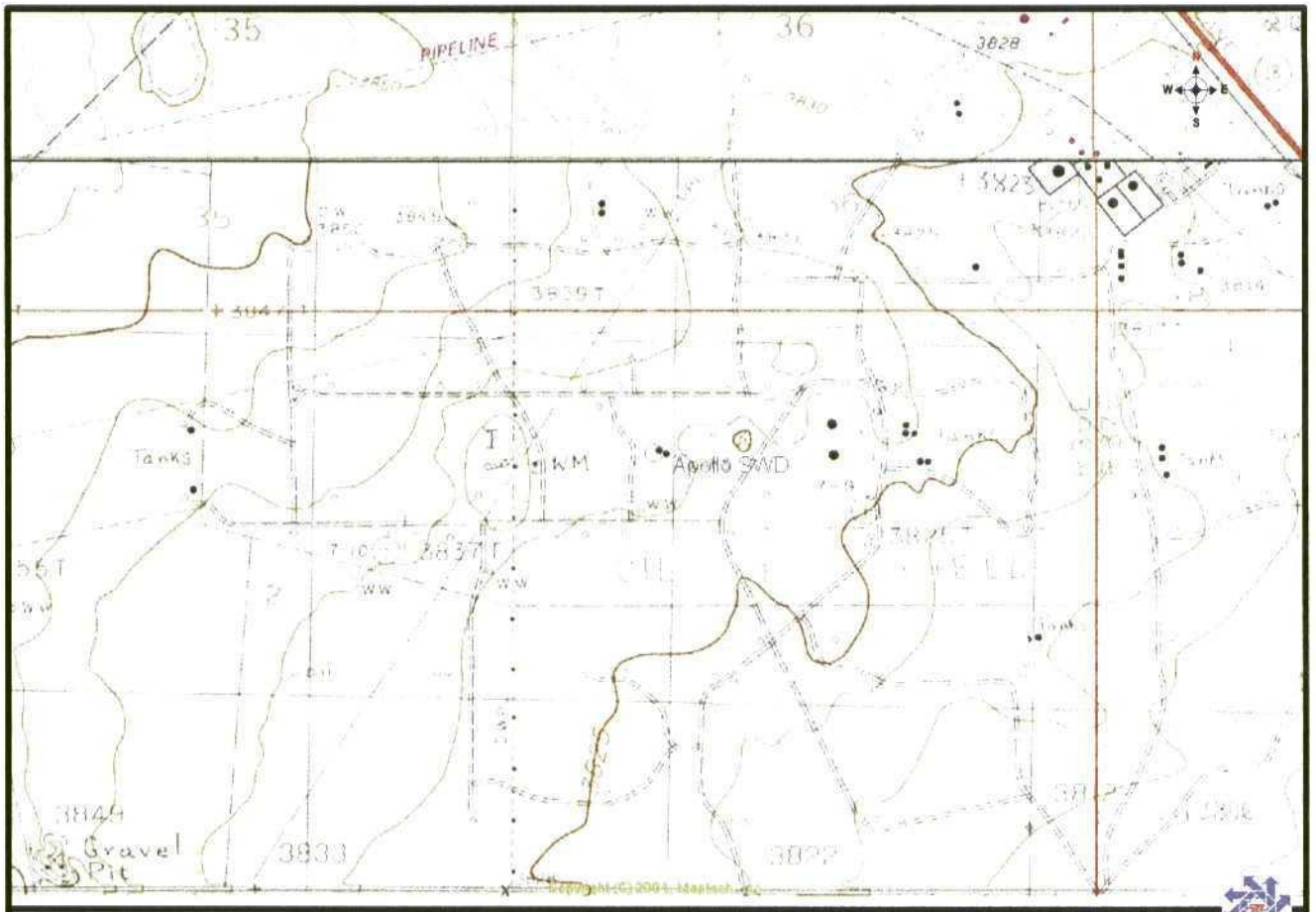
The existing monitor well will be sampled on a semi-annual basis and the results of the analysis will be reported to the NMOCD and the City of Lovington. The sampling program will continue until 4 consecutive sampling events have shown no migration of contaminants to the groundwater has occurred.

The NMOCD and the City of Lovington will be notified at least 72 hours prior to the commencement of the work described above and before each sampling event.

V. Figures & Appendices

Figure 1 - Vicinity Map
Figure 2 - Site Plan
Appendix A – Site Chronology
Appendix B – Initial Monitor Well Sampling Results 2-4-04
Appendix C – Monitor Well Sampling Results 4-7-05
Appendix D – Excavation Sampling Results

Figure 1
Vicinity Map

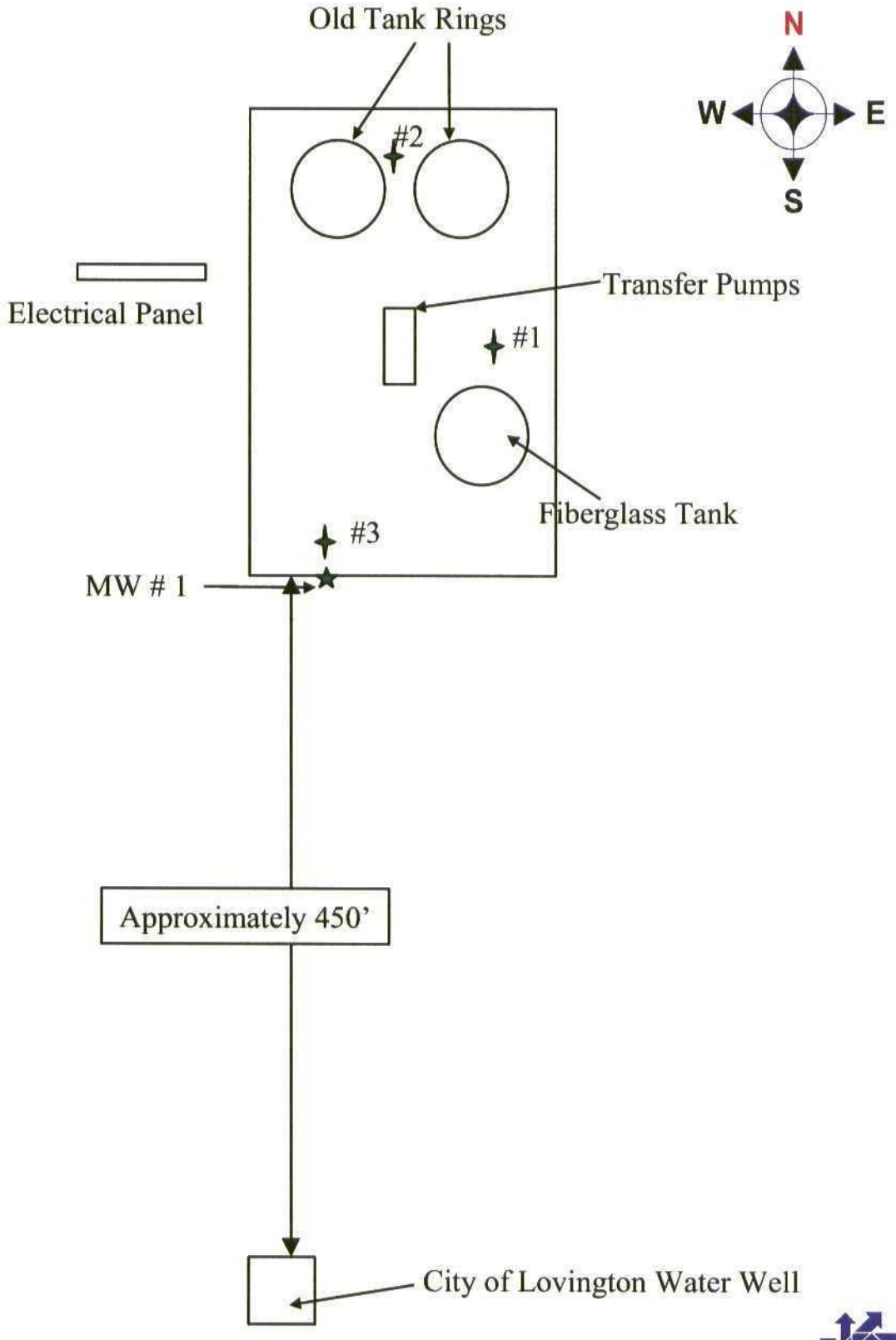


Saga Petroleum

Apollo SWD
S 1, T17S, R36E
Lea County, New Mexico

Safety & Environmental Solutions, Inc.

Figure 2
Site Plan



Saga Petroleum, LLC	**Apollo SWD** **Section 1, T17S, R36E** **Lea County, New Mexico**	***Safety & Environmental Solutions, Inc.***

Appendix A
Site Chronology

SAGA PETROLEUM

PROJECT # SAG-03-001
CHRONOLOGY OF EVENTS

12/2/03	2:00 pm	Bruce Woodard met Bob Allen on location
12/2/03		Preliminary Work Plan sent to NMOCD
12/3/03		NMOCD approval received via e-mail
12/29/03	10:00 am	Bob Allen and Eco Drilling arrived with drilling rig; met Chane Jackson (City of Lovington) to spot Lovington City water lines
	3:20 pm	started drilling
12/30/03	8:00 am	drilling continues
12/31/03	7:45 am	drilling continues
1/12/03		Letter of Intent sent to Wayne Price to perform assessment for SAGA
1/21/03		Confirmation letter sent to NMOCD to confirm NMOCD verbal consent to drill and install Monitoring Well
1/27/04		Copy of formal Work Plan sent to Saga
1/28/04	8:00 am	Bob Allen, Eco Drilling, Sergio Contreras present; sampling activities conducted;
	8:30 am	Pat Wise (Lovington City Manager) on location to witness sampling;
	10:00 am	Eddie Seay on location to witness sampling 5:00 pm ..completed Monitor Well #1
2/2/04	10:45 am	Sergio Contreras on site to develop well;
	11:30 am	contacted Eddie Seay
2/3/04	8:30 am	Sergio Contreras on site to continue well development;
	3:30 pm	contacted Eddie Seay
2/4/04	9:10 am	Sergio Contreras on site with Eddie Seay; developed and sampled well
2/17/04		E-mail sent to NMOCD as preliminary notification of Monitor Well #1 analytical results
2/26/04	7:00 am	Rick Cribbs spotted lines for LINK
	7:30 am	Perry Drennon spotted lines for DUKE
	7:45 am	Jerry Brian (SESI) arrived on location; EDW construction on site
	8:15 am	Mr. Flowers (DUKE) arrived on site
	8:30 am	Excavation began to locate and remove buried lines
2/27/04	7:30 am	Jerry Brian arrived on location; EDW began loading trucks; hauled approx. 78 yrds
	8:00 am	Ron's Welding arrived to cold cut lines
	9:00 am	Greg Watson (EDW) arrived with Dozer to start excavation and stockpiling of hydrocarbon impacted soil
	1:45 pm	mobilized trackhoe to bust through caliche; conducted surface sampling with backhoe to determine horizontal and vertical extent of impacted soil
3/1/04	7:30 am	Jerry Brian arrived on location; excavation continues; hauled approx. 196 yrds
	8:30 am	Bruce Woodard (SAGA) on site
	9:00 am	Larry Johnson and Paul Sheeley (NMOCD) on site to view activities
3/2/04	7:30 am	excavation and hauling continues; hauled approx. 610 yrds
	11:45 am	Bruce Woodard (SAGA) arrives on location
3/3/04	7:30 am	Jerry Brian arrived on location; excavation and haul; hauled approx. 960 yrds
	9:15 am	two soil samples taken for fingerprinting
3/4/04	7:30 am	Jerry Brian on location; excavation and hauling continues; hauled approx. 816 yrds
	9:15 am	Steve Perrin (City of Lovington) arrives to inform us of City of Lovington's water lines; conducted field TPH Analysis
	2:15 pm	Pat Wise (Lovington City Manager) and Steve Perrin on site; conducted field Cl tests
3/5/04	7:30 am	Jerry Brian on location; began moving caliche stockpile for aeration process for berm material
	9:00 am	Pat McMahon (City of Lovington attorney) arrived on site to review process and discuss our intent
	1:00 pm	took soil samples, conducted TPH field tests

	2:34 pm	split samples and took to Cardinal Lab
3/8/04	7:30 am	Jerry Brian on location; excavation and ripping continues
	8:45 am	took 5 point composite and ran field TPH test; split sample
	3:00 pm	Eddie Seay and Pat McMahon on site; discussed OCD procedure
	3:15 pm	Eddie and Pat left
3/9/04	7:00 am	Jerry Brian on location; started hauling again; hauled approx. 840 yrds
	10:00 am	pulled sample and conducted field TPH test
	3:20	Bruce Woodard on site and reviewed aerials with Bob Allen and Jerry Brian; excavation activities halted!
3/10/04	7:00 am	Excavation stopped; hauling continues;
	9:45 am	Bruce Woodard on site
	1:00 pm	R & M trucking arrives with 2 trucks; they move 4 loads; encountered buried electrical line with ripper-pumps down; Harmeyer Electric responded
	4:10 pm	pumps back online
3/11/04	7:00 am	Jerry Brian on location; started spreading out stockpile
	11:30 am	took composite sample of stockpile
	12:00 pm	took sample to lab
3/15/04	8:00 am	Jerry Brian on site; aeration of stockpiles continue;
	8:45 am	Conversation with Larry Johnson (NMOCD) about spreading this aerated caliche on top of the existing pad at the new proposed facility. He was informed him that the current average TPH was 1000 ppm. He approved its use after we spray it with Micro-Blaze
	9:00 am	Conversation with Bruce Woodard about OCD's approval
	2:00 pm	Pat McMahon, Pat Wise, Bob Allen, and Jerry Brian reviewed site and new location
	2:45 pm	McMahon, Wise, and Bob departed
	3:30 pm	Equipment operator finished aerating stockpiles
3/16/04	8:30 am	aerated stockpiles; took 9 point composite sample and took to Lab
3/22/04	8:30 am	took 12 point composite and took sample to Lab

Appendix B
Initial Monitor Well Results 2-4-04

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 02/04/04
Reporting Date: 02/06/04
Project Number: SAG-03-001
Project Name: APOLLO SWA
Project Location: LOVINGTON, NM

Sampling Date: 02/04/04
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		02/05/04	02/05/04	02/05/04	02/05/04
H8432-1	MW-1	<0.002	<0.002	<0.002	<0.006
Quality Control		0.090	0.093	0.092	0.281
True Value QC		0.100	0.100	0.100	0.300
% Recovery		90.3	92.6	91.6	93.7
Relative Percent Difference		4.1	4.8	8.7	8.1

METHOD: EPA SW-846 8260

Chemist

2/6/04
Date

H8432.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO:

Receiving Date: 02/04/04
Reporting Date: 02/06/04
Project Number: SAG-03-001
Project Name: APOLLO SWD
Project Location: LOVINGTON, NM

Sampling Date: 02/04/04
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	02/05/04	02/05/04	02/05/04	02/05/04	02/05/04	02/05/04
H8432-1 MW-1	82	88	12	2.61	944	327
Quality Control	NR	56	59	5.17	1322	NR
True Value QC	NR	50	50	5.00	1413	NR
% Recovery	NR	112	118	103	93.6	NR
Relative Percent Difference	NR	0	0	1.0	0.7	NR
METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	02/05/04	02/05/04	02/05/04	02/05/04	02/05/04	02/06/04
H8432-1 MW-1	64	34	0	398	7.86	473
Quality Control	1020	53.65	NR	996	7.03	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	102	107	NR	99.6	100	NR
Relative Percent Difference	2.0	1.5	NR	0	0.3	1.4
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

2/6/04
Date

H8432