Mid-Valley DMP 4/9/2012

Summary Environmental Issues for the Marble-Arno Property

The following information was accumulated after meetings at the NMED Ground Water Quality Bureau (GWQB) with Bart Faris (NMED), Bruce Furst (NMED) and Chris Naidu (SEC) on April 5th, 2012.

History of the Property

Contract Carriers occupied the north end of the property adjacent to Marble Street. Contained within the shop building was a French drain that discharged all the petroleum based waste into the ground. The contaminated soil was identified, excavated and disposed off in 2007. The detailed corrective action report by Advanced Environmental Solutions dated January 17th, 2008 is attached with this summary.

The second issue was that the site contained 3 petroleum storage tanks. The tanks were removed in 1989, however leaks were discovered underground. Remediation took place from approximately 1991and terminated in 1996. Note that these dates coincide with the discharge permit excel sheet that was disseminated on 3/26/2012 that lists this property. The corrective action included a Soil Vapor Extraction System and a Ground Water Air Stripper system. The Air Stripper system is what required the discharge permit because they basically pumped the contaminated groundwater, aerated it to extract the total petroleum hydrocarbons (TPH) and reinjected the clean water back into the ground. The detailed corrective action report filed with the Petroleum Storage Tank Bureau (PSTB) dated August 15th, 2006, is attached.

Monitoring wells were installed to track concentrations of the known pollutants. See the location of the monitoring well on the sheet attached.

The GWQB has no concerns regarding petroleum contamination in the site. The issue now is with the manganese concentrations present in the vicinity.

There are high concentrations of insoluble manganese present in the valley area. Unfortunately, the chemical breakdown of the petroleum based pollutants creates a series of oxidation- reduction reactions that enable the insoluble manganese to acquire electrons. This changes its state into a soluble form of manganese that quickly contaminates the ground water. As shown on page 13 of 20.6.2 NMAC (Attached), the standard for manganese is 0.2 mg/L. On September 4th, 2009, monitoring well SF11 recorded manganese concentrations of 0.82 mg/L. See attached report.

There have not been any further readings taken since then.

The GWQB had the following concerns/comments regarding the Marble-Arno Pond:

1. Based on previous field observations by Bruce Furst, the subsurface soil conditions are very porous. If the proposed pond is unlined, the infiltration from the pond will cause the manganese plume to migrate, which is cause for major concern.

Mid-Valley DMP 4/9/2012

2. In the event of construction, who will assume responsibility for monitoring manganese and if the plume should migrate who will assume the cost of remediation?

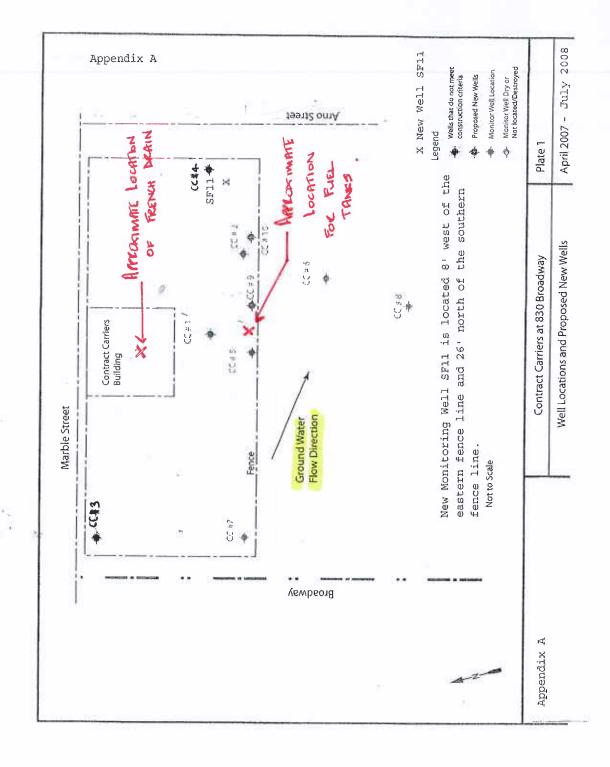
The GWQB also had the following suggestions and comments regarding a solution to the manganese concentrations.

GWQB suggested that the Sandia Foundation could be persuaded to pay for the installation of one or two monitoring wells up gradient from Well CC# 3 (See attached well layout). If the test results indicate manganese concentrations equal to or higher then SF11, then GWQB would assume that the source manganese is present in the whole region instead of being localized at Marble site. In that case no further action will be necessary.

If the results indicate otherwise, the following steps may be required:

- 1. Installation of several down gradient monitoring wells and regular testing.
- 2. Remediation will be required if there is any indication that the manganese plume is migrating. Manganese remediation can be achieved by either aeration, where the addition of oxygen would return the manganese to its original insoluble form. The other method would be changing the pH of the water from 9-10. This method would require pumping of ground water, treatment and reinjection of treated ground water, which would require discharge permits.
- 3. Another alternative to the above would be building a pond that is lined with an impermeable clay layer or a synthetic lining. This would prevent infiltration and keep the manganese plume from migrating.

These are all final design considerations that will have to be addressed in order to build the Marble- Arno pond.





SHISHMAN & ASSOCIATES INC.

6501 Wyoming Boulevard NE, Suite C-130
Albuquerque, New Mexico 87109
e-mail: shishone@aol.com
fax: 505.797.1272
tel: 505.237.9800

via e-mail to Bart.Faris@state.nm.us

December 9, 2005 Project No. 1051.3

Mr. Bart Faris New Mexico Environment Department Ground Water Quality Bureau 5500 San Antonio Boulevard NE Albuquerque, New Mexico 87109

Re: Commercial Property

830 Broadway Boulevard NE Albuquerque, NM 87102



MR. FARIS: This preliminary Clean-Up Plan is submitted for your review on behalf of our client, the Sandia Foundation, in follow-up to the Discovery Report for subject site that we submitted on December 2, 2005.

As previously indicated, the main building on the approximately 2-acre site has been used by several automotive service shops for over 35 years; the last tenant moved out approximately two+ years ago and the facility has stood vacant since then (Photo 1, attached). In anticipation of eventual demolition of the building, an asbestos and lead survey of the premises was conducted by our firm, S&A, and the documented asbestos-containing materials were removed by a licensed asbestos abatement contractor. As the next step in the preparatory work before demolition, Advanced Environmental Solutions, Inc. (AES) was engaged by Sandia Foundation for the screening, clean-up and removal of unknown substances from about 20 each drums and containers on the premises, plus the clean-out of an oil/water separator in the addition on the north side of the Shop and of a concrete-lined walk-in service pit (Photos 2 and 3) in the Main Shop. The contents of both the oil/water separator and of the service pit were sampled, analyzed and found to be non-RCRA hazardous and ready for recycling through a licensed oil recycler. The drums were removed, and the oil/water separator was successfully cleaned out and readied for eventual demolition.

During the attempted clean-out of the walk-in pit, AES discovered that the wastes disposed from the pit were not confined in a concrete chamber or box under the pit; the construction of the subsurface "dump area" seems to resemble a "French Drain" or similar open design under the floor of the service pit. Oil-stained, sandy material was removed by shovel to a depth of 5' to 6' from the subsurface collection area, but due to the confined space the contractor has to work in, no deep penetration of the French Drain could be accomplished. We concluded that the contaminated French Drain should be exposed by removal of the concrete slab and the service pit above it in order to allow visual examination and testing of the contaminated soil below both vertically and horizontally.

The shop or garage was constructed with cement block exterior walls, wood roof joists and columns, and a flat built-up roof. The building shows structural deterioration and damage in its exterior walls, e.g., the

Conclusion 1: The vertical extent of contamination was established as ~30 ft below ground surface.

Boreholes #1 thru #5 were advanced on the east-west centerline of the rectangular walk-in service bay, with locations of boreholes measured from the center of the French Drain in the service bay. Similarly, Boreholes #6 thru #8 were advanced on the north-south centerline of the walk-in service bay. While Boreholes #6 and #8 were located in the main shop, south of the walk-in service bay, Borehole #7 was advanced in the addition to the shop, north of the east-west wall separating the main shop and the addition. Bore Sampling Summary, East-West shows that DRO/MRO levels in Boreholes #3 and #4 drop to <100 ppm at sampling depths between 7 ft and 35 ft; Bore Sampling Summary, North-South displays that DRO/MRO levels in Borehole #7 drop to ND at sampling depths between 7 ft and 33 ft. Borehole #8 shows similar results, except at 30 ft depth, where the DRO/MRO levels are 120/140 ppm.

Analyses of the soil samples collected from the French Drain at ~30 ft and ~35 ft depths returned ND for Gasoline Range Organics (GRO), ND for the TCLP Metals, and the presence of a number of analytes, at relatively insignificant levels, for the Volatile Organics and the Polynuclear Aromatic Hydrocarbons.

Conclusion 2: The horizontal extent of contamination was established as ~10 ft east, ~10 ft west, ~6 ft south and ~15 ft north from the center of the French Drain.

<u>Conclusion 3</u>: The demolition of the concrete slab and the excavation, removal and disposal of the contaminated soils from the approximately 20 ft east-west by approximately 16 ft north-south by approximately 35 ft deep volume, centered on the French Drain, present a somewhat unique challenge, particularly due to the proximity of the east-west wall separating the main shop from the addition to the north.

Recommendation: Given the expected end of the monsoon season around the middle of September, we request that you call a meeting of the demolition team to discuss these findings and to develop an updated demolition, excavation and disposal plan that can be implemented safely and without any further delay.

In case of questions about this submittal and the findings reported, call us at tel. 505.237.9800.

We look forward to hearing from you.

Sincerely yours,

SHISHMAN & ASSOCIATES INC.

Thomas T. Shishman, REM President

TTS:mas

Encl. Exhibit 1, AES Letter Report dated May 30, 2006

Exhibit 2, AES Letter Report dated August 8, 2006

Copies Mr. Bart Faris, NMED

Mr. Doug Roshau, AES w/o enci

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PHILIP & SONS 830 Broadway Boulevard NE S&A Report No. 1051.33

Page 2

S&A



Photo 1: Auto Service Shop



Photo 3: Service Pit (rt. side) in Active Garage



Photo 2: Walk-In Pit Viewed from Above

(32) (33)	I man	
В.	Other Standards for Domestic Water Supply	
(1)	Chloride (Cl)250.0 mg/l	
(2)	Copper (Cu)	
(3)	Iron (Fe)	
(4)	Manganese (Mn)	A
(6)	Phenols	
(7)	Surrate (SO ₄)	
(8)	total Dissolved Solids (TDS)	
(9)	Zinc (Zn)	
(10)	pHbetween 6 and 9	
C.	Standards for Irrigation Use - Ground water shall meet the standards of Subsection	ction A. B.
and C of this sec	ction unless otherwise provided.	, –,
(1)	Aluminum (Al)	
(2)	Boron (B) 0.75 mg/l	
(3)	Cobalt (Co)	
(4)	Molybdenum (Mo)	
(5)	Nickel (Ni)	
04]	2, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC - Rn, 20 NMAC 6.2.III.3103, 1-15-	
[Note: For purpo	oses of application of the amended numeric uranium standard to past and current water	r discharges

[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007. For any new water discharges, the uranium standard is effective 9-26-04.]

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly of indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20.6.2.3111 NMAC, regarding transfers. [2-18-77, 12-24-87, 12-1-95; Rn & A, 20.6.2.3104 NMAC - 20 NMAC 6.2.III.3104, 1-15-01; A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20.6.2.3104 and 20.6.2.3106 NMAC do not apply to the following:

A. Effluent or leachate which conforms to all the listed numerical standards of Section 20.6.2.3103 NMAC and has a total nitrogen concentration of 10 mg/l or less, and does not contain any toxic pollutant. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is discharged from a sewerage system used only for disposal of household and other domestic waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day;

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section;

F. Those constituents which are subject to effective and enforceable effluent limitations in a National Pollutant Discharge Elimination System (NPDES) permit, where discharge onto or below the surface of the ground so that water contaminants may move directly or indirectly into ground water occurs downstream from the outfall

2318 Roldan Drive •Belen, New Mexico 87002 (505) 861-1700 • Fax (505) 864-1710 24 hr. Emergency #: (505) 861-1700 ext. 7 e-mail: <u>AESolutions@aesnm.com</u>

August 15, 2008

Sandia Foundation Arroyo del Oso Plaza, Suite 100 6211 San Mateo Boulevard NE Albuquerque, NM 87109 Attn: Mr. Thomas T. Shishman

Re: Monitoring Well # SF11 Installation Report for No. 1051.4 for CAR Work Plan, 830 Broadway Boulevard NE, Albuquerque, NM 87102

Thank you for selecting **Advanced Environmental Solutions**, **Inc.** (AES) to help you with your environmental groundwater monitoring, sampling and administrative needs. We appreciate the opportunity to provide you with quality and timely service and trust our response met your expectations.

This Report is in response to activities conducted IAW the Corrective Action Report (CAR) prepared by Shishman & Associates, Inc. dated August 10, 2007 and approved by NMED on October 12, 2007 – Project number 1051.4. This particular phase of the CAR details the installation of a monitoring well following the excavation and removal of petroleum hydrocarbon (TPH) contaminated soil at 830 Broadway Boulevard NE in Albuquerque, NM. The new monitoring well is identified as SF11 and is located down gradient from the former "french drain" and source of the initial TPH contamination. The well is southeast of the former "french drain", in the generally agreed upon direction of groundwater flow in the immediate area. The well is located 8' west of the property's east fence line along Arno Street and 26' north of the property's south fence line. Appendix A illustrates the location of the new monitoring well (SF11) and the location of additional wells from previous groundwater monitoring activities.

On July 16, 2008, AES personnel and drilling sub-contractor; Enviro-Drill, Inc. personnel met at the project site for the installation of monitoring well SF11. The equipment utilized for the well installation was a 6" hollow stem auger with an 18" standard split spoon sampler. As the drilling of the well progressed, soil samples were obtained at 5" intervals and soil types, color, moisture, and any other notable observations were noted on the Borehole log which is included as Appendix B of this report. The blow counts for each 18" sample are also noted to provide insight regarding the hardness of the soil types encountered. A calibrated MultiRae Plus meter was used to field test for Volatile Organic Compounds (VOCs) in the soil samples obtained at 5" intervals and the "heated headspace" method was followed for the VOCs field analysis. No VOCs were

detected in any of the soil samples. Additionally, no hydrocarbon odor was detected in any of the soil samples. The split spoon sampler was decontaminated with an Alconox and water solution prior to and between any samples being obtained. Groundwater was encountered at a depth of 60' and drilling and sampling continued to a depth of 70'.

Following the borehole drilling; the well was completed. A 15' slotted PVC screen with a PVC plug was placed into the bottom of the well with 2" Schedule 40 PVC pipe extending to the surface. The depth of the finished well extended to a depth of 67'. The PVC slotted screen extended from 52' to 67' below surface, within and above the current water table. Appendix C is included to describe the Monitoring Well Construction Details. A filter pack consisting of Colorado Silica Sand surrounding the PVC screen and pipe extended from the bottom of the borehole to 51' below the surface and 1' above the slotted PVC screen. Baroid 3/8" Hole Plug bentonite pellets were placed in the annular space of the borehole above the filter pack to provide a seal to prevent the migration of water from the surface into the monitoring well. This bentonite seal extended from a depth of 48' to 51'. Above the bentonite seal and extending to the well's surface, a Quik grout and Portland cement slurry was introduced into the annular space of the borehole. A locking well cap protector was placed on the top of the PVC pipe. A concrete pad and cover were constructed to protect and provide security for the finished monitoring well.

Approximately seven casing volumes of water (8 gallons) were purged from the well using a single use bailer to remove any residual water which may have entered the well during the well drilling and completion process. The water was containerized and left on site for characterization following monitoring well sampling.

Thank you for the opportunity to provide these environmental services to your organization. If you have any questions concerning this project or any of the information contained within this report, please feel free to call me at (505) 861-1700.

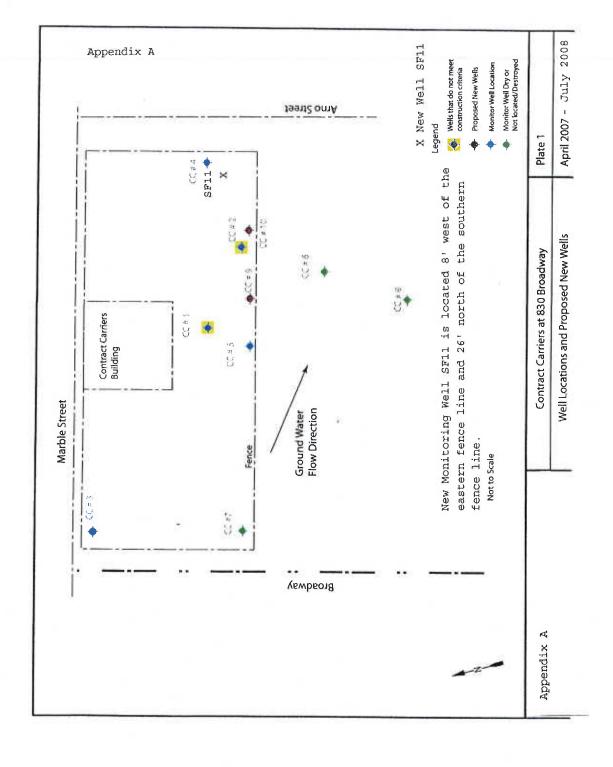
Sincerely,

Douglas Roshau

Longlas Rosham

Project Manager

Advanced Environmental Solutions, Inc.



Appendix B Borehole Log - Well # SF11-830 Broadway Blvd. NE., Alb, NM July 16, 2008

Depth	Color	Moisture	Blow Count*	: 500 >	Soil Type	Additional Comments
5'	Brown	Dry	2-3-5	<0.1 ppm	Clay	
10"	Grey	Dry	2-3-6	<0.1 ppm	Sand	
15'	Brown	Slight Moisture	5-6-9	<0.1 ppm	Course Sand	
20'	Brown	Dry	7-10-10	<0.1 ppm	Sand	
25'	Brown	Dry	4-4-7	<0.1 ppm	Silt & Slight Clay	
30'	Brown	Dry	2-3-5	<0.1 ppm	Silt & Slight Clay	
35'	Dark Brown	Slight Moisture	2-3-13	<0.1 ppm	Silt & More Clay	
40' 41'	Dark Brown Grey &	Slight Moisture Dry	21-31-36	<0.1 ppm	Silt & More Clay Granite &	
	White				Gravel	

Appendix B Borehole Log - Well # SF11-830 Broadway Blvd. NE., Alb, NM July 16, 2008

Depth	Cofor	Moisture	Blow Count*	. soon	Soil Type	Additional Comments
43' 45'	White & Grey &	Dry	30-23-18	<0.1 ppm	Quartz & Granite &	
46' 50' 51'	Brown Light Tan	Dry	37-50 for 5"	<0.1 ppm	Clay Compacted Clay	
51' 55'	Brown Brown	Dry Slight Moisture	35-50 for 5"	<0.1 ppm	Silt Silt	
59' 60'	Dark Brown	Wet	35-42-50 for 5"	<0.1 ppm	Silt	Water reached at 60'
65'	Dark Brown	Wet	29-42-50 for 5"	<0.1 ppm	Medium Sand	
70°	Dark Brown	Very Wet	29-35-50 for 4"	<0.1 ppm	Medium Sand	

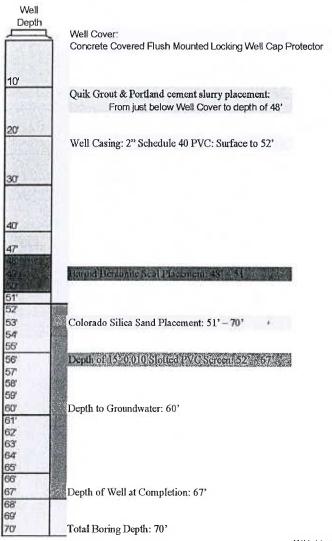
^{*} Blow Count - 140 lb weight drops 30" to obtain 18" split-spoon sample at 5' intervals

Drilling Contractor: Enviro-Drill, Inc. 6" Drill Rig – Vehicle # 695 Equipment: 6" Hollow Stem Auger with standard split spoon sampling Logged By: Douglas Roshau - Advanced Environmental Solutions, Inc.

^{*}The split-spoon sampler was decontaminated with an Alconox and water solution following each sample.

^{**} Volatile Organic Compounds(VOCs) were measured using a calibrated MultiRae Plus meter. ** Model # PGM50-5P, Serial # 095-518187

Appendix C
Monitoring Well Construction Detail - Well # SF11-830 Broadway Blvd. NE, Alb., NM
July 16, 2008



***Not to Scale

Drilling Contractor: Enviro-Drill, Inc. 6" Drill Rig – Vehicle # 695 Equipment: 6" Hollow Stem Auger with standard split spoon sampling Logged By: Douglas Roshau – Advanced Environmental Solutions, Inc.



blownwater .

FEERLY DROWN.

2318 Roldan Drive •Belen, New Mexico 87002 (505) 861-1700 • Fax (505) 864-1710 24 hr. Emergency #: (505) 861-1700 ext. 7 e-mail: AESolutions@aesnm.com

January 17, 2008

Sandia Foundation Arroyo del Oso Plaza, Suite 100 6211 San Mateo Boulevard NE Albuquerque, NM 87109 Attn: Mr. Thomas T. Shishman

Re: Final Report No. 1051.4 for CAR Work Plan, 830 Broadway Boulevard NE, Albuquerque, NM 87102

Thank you for selecting **Advanced Environmental Solution**, **Inc.** (AES) to help you with your soil excavation, sampling and administrative needs. We appreciate the opportunity to provide you with quality and timely service and trust our response met your expectations.

This Report is in response to activities conducted IAW the Corrective Action Report (CAR) prepared by Shishman & Associates, Inc. dated August 10, 2007 and approved by NMED on October 12, 2007 - Project number 1051.4. This particular phase of the CAR details the excavation and removal of petroleum hydrocarbon (TPH) contaminated soil at 830 Broadway Boulevard NE in Albuquerque, NM. Our activities consisted of: 1) providing guidance and direction to excavate the TPH contaminated soil; 2) continuously assess the horizontal and vertical extent of contamination in the excavation cavity; 3) testing the excavated soils to distinguish the contaminated soil from the non-contaminated soil employing field analytical techniques and certified laboratory analysis; 4) obtaining a representative contaminated soil sample for laboratory analysis to properly characterize the excavated soil for disposal; 5) preparing and submitting a special waste profile form to Waste Management, Inc. for approval to dispose of the soil at a their bioremediation facility at the Valencia County Regional Landfill (VCRL); 6) prepare shipping documents for TPH soil transportation and disposal; 7) ship approximately 860 cubic yards of TPH soil to the VCRL for remediation; 8) obtain 5 sets of soil samples for certified laboratory analysis from the bottom of the excavation area to verify the successful removal of all TPH soil.

Soil Excavation and Sampling:

The demolition of the structure at 830 Broadway NE was completed on November 15, 2007. On November 16, 2007, the previously defined area of contaminated soil was measured, located and referenced for the start of soil excavation activities. Initially, the top layer of soil to a depth of approximately 5'- 7' was excavated (Photo B.1, B.2) and

determined to be not contaminated with petroleum hydrocarbons and placed in a separate area to stockpile the soil determined to be clean and suitable for backfill (Photo B.3). TPH contaminated soil was soon encountered in the suspected area and segregated for subsequent disposal. Field TPH analysis techniques included visual and odoriferous observations as well as employing the PetroFLAG Hydrocarbon Test Kit (Photo B.4) and the Hanby Hydrocarbon Test Kit to determine the extent or presence of petroleum hydrocarbon contamination. Initially, soil samples of field tested and suspected "clean" soil were presented for certified laboratory analysis to verify the accuracy of the field testing (Appendix E). Soil excavation continued as expected, separating TPH contaminated soil from non-TPH contaminated soil. At a depth of approximately 22', just above a slight clay layer, a 1'-11/2' seam of TPH soil extending west and south beyond the original suspected contamination area of 16' North-South by 20' East-West was observed and verified through soil testing (Photo B.5, B.6). The excavation was extended to include this additional soil. The excavation of TPH soil continued to the expected depth of approximately 30'. The bottom of the excavation area measured approximately 30' North-South by 40' East-West (Photo B.8, B.9, and B.10).

On November 28, 2007, five sets of soil samples were obtained from the bottom of the excavation area: one from the center and one from each corner of the cavity (Photo B.11, B.12, and B.13). The soil samples were prepared for certified laboratory analysis. Volatile organics samples for Gasoline Range Organics (GRO) and 8260 Volatile Organics were prepared employing methanol extraction techniques. The soil samples were properly labeled and a Chain of Custody form was completed for each set of samples. The soil samples were relinquished to Hall Environmental Analysis Laboratory for the following analysis on each set of samples: 8015B MRO/DRO/GRO, 8260 Volatiles, 8270 Semi-Volatiles and TCLP RCRA Metals. The samples were analyzed according to EPA procedures and reporting limits were determined by EPA methodology. No determination of compounds below these reporting limits has been made. On December 4, 2007, analytical results were returned for all of the tested analyses. All results from all five sets of soil samples were below the laboratory reporting limits, thereby indicating that the TPH contaminated soil had been successfully removed from the excavation cavity (Appendix F). The excavation cavity could therefore be filled with clean backfill and leveled to grade.

Soil Transportation and Disposal:

Representative profile analytical results to properly characterize the soil for disposal were obtained during soil core sampling activities on February 16, 2006 and August 7, 2006 (Appendix C). These results along with a completed waste profile form (Appendix D) were submitted to Waste Management, Inc. (WMI) for approval. WMI representatives approved the soil for bioremediation at the Valencia Regional Landfill facility. Beginning on November 20, 2007 and extending to November 30, 2007, a total of 43 loads of TPH contaminated soil was manifested on WMI Shipping Records, with proper signatures, and transported by Special Waste hauler PG Enterprises to the Valencia Regional Landfill for bioremediation (Appendix H). Final weight tickets indicate the total weight of soil offered for bioremediation was 1,092 tons or approximately 860 cubic yards.

Enclosed with this report you will find the following information:

Appendix A - Chronology of Events

Appendix B - Photo Essay

Appendix C – Profile Analytical Results

Appendix D – Profile Form

Appendix E - Interim Analytical Results

Appendix F – Confirmatory Analytical Results

Appendix G – Generator Authorization

Appendix H – Shipping Records

Per documentation listed, the CAR Remediation Plan phase is complete. Planning for the Monitoring and Testing Program phase of the CAR has begun, which includes the installation of a down-gradient monitoring well and the analysis of ground water for VOCs and PAHs.

Thank you for the opportunity to provide these environmental services to your organization. If you have any questions concerning this project or any of the information contained within this report, please feel free to call me at (505) 861-1700.

Sincerely,

Douglas Roshau

Lorden Roshan

Project Manager

Advanced Environmental Solutions, Inc.

CHRONOLOGY OF EVENTS

Date: Friday, October 12, 2007

Activity: NMED Approval of CAR Work Plan

Notes By: Douglas Roshau, Project Manager

Receive notification of NMED approval of CAR Work Plan through Mr.

Thomas T. Shishman.

Proceed with preparation for soil excavation activities, field testing, laboratory

analytical, and soil transportation and disposal.

Date: Wednesday, October 31, 2007

Activity: Profile Submittal to Waste Management, Inc.

Notes By: Douglas Roshau, Project Manager

Review profile analytical results from soil boring and sampling activities and complete "Generator's Nonhazardous Waste Profile Form". Obtain signature from Mr. Patrick Glennon on profile form and "Generator Authorization" form, which authorizes AES personnel to sign shipping documents on behalf of the

Sandia Foundation.

Submit profile form and profile analytical results to Waste Management, Inc. (WMI) for approval to bioremediate the Soil with Petroleum Hydrocarbons

(TPH) at the Valencia County Regional Landfill Facility (VCRL).

Date: Monday, November 12, 2007

Activity: Profile Approval

Notes By: Douglas Roshau, Project Manager

Receive approval from WMI to bioremediate the TPH soil at the Valencia

County Regional Landfill.

Date: Thursday, November 15, 2007 Activity: Structure Demolition Completed

Douglas Roshau, Project Manager Notes By:

A tour of the 830 Broadway site verified the demolition and removal of building debris and the concrete pad and foundation in preparation for soil excavation

activities.

Date: Friday, November 16, 2007 Activity: **Initial Soil Excavation**

Notes By: Douglas Roshau, Project Manager

Avilio Chavez, Field Chemist

AES personnel meet with Guzman Construction personnel to discuss the 8:00 am

project's Work Plan and Health and Safety concerns.

Meet with PNM representatives to insure the utilities are disconnected to the

project site.

Identify the area of contaminated soil. Mark, measure and attain coordinates to identify the exact location of the area of contamination for continual reference

throughout soil excavation activities.

Calibrate the Petroflag and Hanby TPH Testing Kits.

Begin soil excavation by removing soil from an area with an approximate diameter of 100', to a depth of 5'-7'. Continuous field Petroleum Hydrocarbon (TPH) testing indicated the TPH levels for this soil were < 100 ppm. A representative sample of this soil was obtained and presented to an analytical laboratory for TPH analysis. Laboratory results verified the results of the field testing, indicating that Petroleum Hydrocarbons were not present in this soil. Therefore, this soil was segregated to an area, where the soil will be subsequently used to backfill the excavation cavity.

At a depth of approximately 7', in the center of the excavation cavity, the area of contaminated soil was encountered, as expected. This contaminated soil with a TPH level > 100 ppm was segregated and stockpiled for subsequent disposal. Field testing continued to verify the vertical and horizontal extent of TPH contamination, providing guidance to separate the clean soil from the contaminated soil. The excavation's depth was approximately 8' at the end of the day.

Date:

Monday, November 19, 2007

Activity: Soil Excavation

Notes By:

Douglas Roshau, Project Manager

Avilio Chavez, Field Chemist

7:30 am

AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns. Calibrate the Petroflag and Hanby TPH Testing Kits.

Soil excavation activities continued excavating contaminated soil from the center of the excavation area. Soil benching around the perimeter of the excavation cavity was performed as the excavation cavity became deeper. Field testing continued to verify the vertical and horizontal extent of TPH contamination, providing guidance to separate the clean soil from the contaminated soil. Meet with Mr. Bart Faris on-site to discuss project's progress and procedures.

Excavation depth at the day's end was approximately 12'.

Date:

Tuesday, November 20, 2007

Activity:

Soil Excavation and Transportation

Notes By:

Douglas Roshau, Project Manager

Avilio Chavez, Field Chemist

7:30 am

AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns. Calibrate the Petroflag and Hanby TPH Testing Kits.

Soil excavation activities continued excavating contaminated soil from the center of the excavation area. Soil benching around the perimeter of the excavation cavity was performed as the excavation cavity became deeper. Field testing continued to verify the vertical and horizontal extent of TPH contamination, providing guidance to separate the clean soil from the contaminated soil. Excavation continued to a depth of approximately 25°. At this time a seam of discoloration was observed on the southwest edge of the excavation area at a depth of approximately 20°-22° (Photo B.5, B.6). Field testing indicated that this seam of soil contained petroleum hydrocarbons of 1,958 ppm. Mr. Patrick Glennon was notified of the discovery and it was decided that this seam should

be followed to remove all contaminated soil.

Soil Loading and Transportation:

PG Enterprises begins the transportation of the TPH soil to the Valencia County Regional Landfill facility for bioremediation:

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50765

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50764

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50763

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50762

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50756

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50754

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50761

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50757

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50755

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50753

Date:

Wednesday, November 21, 2007 Soil Excavation and Transportation

Activity:
Notes By:

Douglas Roshau, Project Manager

Avilio Chavez, Field Chemist

7:30 am

AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns.

Calibrate the Petroflag and Hanby TPH Testing Kits.

Following the discovery of the seam of contaminated soil at approximately 20'-22', the south and west edges of the excavation cavity were benched back further to accommodate the removal of the soil. Field testing continued to verify the vertical and horizontal extent of TPH contamination, providing guidance to separate the clean soil from the contaminated soil. The bottom of the excavation

area was extended approximately 20' west and 14' south. At the furthest point west and south, the field TPH tests were returning TPH levels of 0 ppm.

Soil Loading and Transportation:

PG Enterprises continues the transportation of the TPH soil to the Valencia County Regional Landfill facility for bioremediation:

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 42459

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 42442

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46467

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46465

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 42460

Date:

Monday, November 26, 2007

Activity:

Soil Excavation and Transportation

Notes By:

Douglas Roshau, Project Manager

Avilio Chavez, Field Chemist

7:30 am

AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns. Calibrate the Petroflag and Hanby TPH Testing Kits.

Soil excavation activities continued excavating contaminated soil from the center of the excavation area. Soil benching around the perimeter of the excavation cavity was performed as the excavation cavity became deeper. Field testing continued to verify the vertical and horizontal extent of TPH contamination, providing guidance to separate the clean soil from the contaminated soil. At the day's end, the excavation was approximately 28' deep.

Soil Loading and Transportation:

PG Enterprises continues the transportation of the TPH soil to the Valencia County Regional Landfill facility for bioremediation:

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50775

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50773

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50774

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50771

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50772

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50769

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50770

Date:

Tuesday, November 27, 2007

Activity:

Soil Excavation and Transportation

Notes By:

Douglas Roshau, Project Manager

Avilio Chavez, Field Chemist

7:30 am

AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns.

Calibrate the Petroflag and Hanby TPH Testing Kits.

Soil excavation activities continued excavating contaminated soil from the center of the excavation area. Soil benching around the perimeter of the excavation cavity was performed as the excavation cavity became deeper. Field testing continued to verify the vertical and horizontal extent of TPH contamination, providing guidance to separate the clean soil from the contaminated soil. Soil depth at the end of the day was approximately 30°.

Soil Loading and Transportation:

PG Enterprises continues the transportation of the TPH soil to the Valencia County Regional Landfill facility for bioremediation:

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50776

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50777

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50779

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50778

Date:

Wednesday, November 28, 2007

Activity:

Soil Excavation and Transportation and Confirmatory Soil Sampling

Notes By:

Douglas Roshau, Project Manager Avilio Chavez, Field Chemist

7;30 am AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns. Calibrate the Petroflag and Hanby TPH Testing Kits. 8:30 am Soil from the bottom of the excavation cavity was inspected and field TPH testing indicated that all TPH contaminated soil had been removed from the excavation cavity to a depth of approximately 30'. Prepare to obtain confirmatory samples. 9:50 am AES field chemist obtains representative soil sample from the bottom southwest corner of the excavation cavity. Prepare and label soil samples for laboratory analysis: 8015B MRO/DRO/GRO, 8260 Volatiles, 8270 Semi-Volatiles and TCLP RCRA Metals. Complete Chain of custody form. Preserve samples in cooler on ice. 10:00 am AES field chemist obtains representative soil sample from the bottom center of the excavation cavity. Prepare and label soil samples for laboratory analysis: 8015B MRO/DRO/GRO, 8260 Volatiles, 8270 Semi-Volatiles and TCLP RCRA Metals. Complete Chain of custody form. Preserve samples in cooler on ice. 10:20 am AES field chemist obtains representative soil sample from the bottom northwest corner of the excavation cavity. Prepare and label soil samples for laboratory analysis: 8015B MRO/DRO/GRO, 8260 Volatiles, 8270 Semi-Volatiles and TCLP RCRA Metals. Complete Chain of custody form. Preserve samples in cooler on ice. AES field chemist obtains representative soil sample from the bottom southeast 12:40 pm corner of the excavation cavity. Prepare and label soil samples for laboratory analysis: 8015B MRO/DRO/GRO, 8260 Volatiles, 8270 Semi-Volatiles and TCLP RCRA Metals. Complete Chain of custody form. Preserve samples in cooler on ice. AES field chemist obtains representative soil sample from the bottom northeast 1:00 pm corner of the excavation cavity. Prepare and label soil samples for laboratory analysis: 8015B MRO/DRO/GRO, 8260 Volatiles, 8270 Semi-Volatiles and TCLP RCRA Metals. Complete Chain of custody form. Preserve samples in cooler on ice. 1:51 pm AES Project Manager relinquishes samples to Hall Environmental Analysis Laboratory for analysis. Soil Loading and Transportation: PG Enterprises continues the transportation of the TPH soil to the Valencia County Regional Landfill facility for bioremediation: Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures. Relinquish Shipment # 46470 Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46469

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46468

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50782

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50781

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 50780

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46466

Date:

Thursday, November 29, 2007

Activity:

Soil Transportation

Notes By:

Avilio Chavez, Field Chemist

7:30 am

AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns.

Soil Loading and Transportation:

PG Enterprises continues the transportation of the TPH soil to the Valencia County Regional Landfill facility for bioremediation:

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46472

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46473

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46471

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46474

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 48890

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46476

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 46475

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 48891

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain appropriate signatures.

Relinquish Shipment # 48894

Date:

Friday, November 30, 2007

Activity:

Soil Transportation

Notes By:

Avilio Chavez, Field Chemist

7:30 am

AES personnel meet with Guzman Construction personnel to discuss the project's Work Plan and Health and Safety concerns.

Soil Loading and Transportation:

PG Enterprises completes the transportation of the TPH soil to the Valencia

County Regional Landfill facility for bioremediation:

Load approximately 20yd³ of TPH Soil onto end dump trailer and obtain

appropriate signatures. Relinquish Shipment # 48895

Total 43 loads to Valencia County Regional Landfill facility

Date:

Tuesday, December 4, 2007

Activity:

Analytical Review

Notes By:

Douglas Roshau, Project Manager

Receive confirmatory analytical results from laboratory. Review analytical results. The analytical results for all of the sample analyses tested reported levels below the laboratory reporting limits, thereby confirming the removal of all TPH contaminated soil from the excavation cavity to a depth of 30°.

PHOTO ESSAY



B.1, Initial Excavation, South to North View



B.2, Initial Excavation, West to East View



B.3, Segregation of TPH Soil and Clean Backfill, Southeast to Northwest View



B.4, Petroflag Field Testing Kit



B.5, Soil Benching for Reaching Deeper Contaminated Soil



B.6, Seam of Petroleum Hydrocarbon Contamination



B.7, Excavation Cavity



B.8, Bottom of Excavation Cavity



B.9, Bottom of Excavation Cavity



B.10, Excavation Cavity



B.11, Obtaining Soil Samples from Bottom of Excavation Cavity



B.12, Obtaining Soil Samples from Bottom of Excavation Cavity



B.13, Soil Samples from Bottom of Excavation Cavity



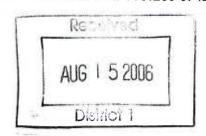
B.14, Segregating Soil with Petroleum Hydrocarbons

R. T. Hicks Consultants, Ltd. PSTB - LATER REPORT.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

August 15, 2006

Bruce Furst New Mexico Environment Department Petroleum Storage Tank Bureau 5301 Central Avenue NE, Suite 800 Albuquerque, NM 87108



Re:

Monitoring Well Status 2005 at the Former Contract Carriers site located at 830 Broadway NE in Albuquerque, New Mexico

Facility (old/new)#: 8601001/27513

Release ID #:411

WPID #:14033

200d By 8/25/06

Dear Mr. Furst:

R.T. Hicks Consultants is pleased to submit this status report, on behalf of Maloof Companies, for the above-referenced site in response to New Mexico Environment Department's request to perform a well inventory, condition survey, and one event of ground water sampling and monitoring.

This workplan includes one task for the above referenced site: Ground Water Monitoring and Sampling.

We conducted sampling and monitoring activities on May 17, 2006 in accordance with the current work plan (WPID: 14375) approved by the New Mexico Environment Department (NMED) Petroleum Storage Tank Bureau (PSTB) on May 10, 2006.

Please call me at (505) 266-5004 if you have any questions regarding this site.

Sincerely,

R.T. Hicks Consultants, Ltd.

Katie Lee

Cc:

Project Manager

Michael Rzendzian, Maloof Company

Site Name: Contract Carriers Site at 830 Broadway NE USTB Facility (old/new)#: 8601001/27513

Date: August 15, 2006

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STATEMENT OF FAMILIARITY

I, the undersigned, am personally familiar with the information submitted in this report and the attached documents and attest that it is true and complete.

Signature:

0161141410.

Name:

Katie Lee

Affiliation:

R.T. Hicks Consultants, Ltd.

Title:

Project Manager

Katie Lee

Date:

August 15, 2006

USTB Facility (old/new)#: 8601001/27513

Date: August 15, 2006

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investigation in December of 2005 and 3) collecting ground water samples from all wells with sufficient water to obtain a sample. Ground water samples are to be analyzed for volatile organic compounds limited to benzene, toluene, ethylbenzene, xylene, and naphthalene (BTEXN), Methyl Tertiary Butyl Ether (MTBE), and 1,2- Dichloroethane (EDC) using EPA method 8260, 1,2-Dibromoethane (EDB) using EPA Method 504.1, and dissolved iron, lead, and manganese using EPA method 6010B.

I.B Quarter Highlights

We completed the following activities during this sampling event:

- Attempted to measure fluid levels in six monitoring wells,
- Attempted to locate the monitoring well known as CC#8 with a metal detector,
- Collected ground water samples from the four monitoring wells with water sufficient to sample, and
- Prepared Form 1216 monitoring report.

II. ACTIVITIES PERFORMED DURING THIS HALF

II.A Remediation System

The remediation system at the Site has been out of operation since 1996.

II.B System Operation

The remediation system at the Site has been out of operation since 1996.

II.C Monitoring Activities

On May 17, 2006, Hicks Consultants personnel attempted to measure the depth to water in seven monitoring wells (CC-1, CC-2, CC-3, CC-4, CC-5, CC-6, CC-8). CC-7 is known to be dry. Depth to water data was collected for CC-1, CC-2, CC-3, CC-4, and CC-5. CC-7 was confirmed to remain dry and CC-6 and CC-8 could not be located. A metal detector was obtained and used to search for CC-8. We attempted to locate its approximate location based on a 1996 map and scale and searching with the detector within a 15-foot radius of the estimated location of the well. A shovel was used to dig in areas with strong metal detection was encountered but no well was found. As the property where CC-6 and CC-8 were located is a construction site, the entire parcel has been graded and it is believed that the tops of both of these wells were probably cut off and removed during grading. Neither well was located during this investigation.

On May 17, 2006, R.T. Hicks personnel collected ground water samples from CC-1, C-2, CC-3, and CC-4 after purging monitoring wells. There was insufficient water for sample recovery at CC-5. We submitted ground water samples under full chain-of-custody to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis of volatile organic compounds limited to benzene, toluene, ethylbenzene, xylene, and naphthalene (BTEXN), Methyl Tertiary Butyl Ether (MTBE), and 1,2- Dichloroethane (EDC) using EPA method 8260,

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Date: August 15, 2006

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1,2-Dibromoethane (EDB) using EPA Method 504.1, and dissolved lead, iron and manganese using EPA method 6010B.

Plate 1 presents a 1996 Souder, Miller & Associates map of the site with monitoring well locations noted. Appendix A contains our sampling protocol, Appendix B contains our field notes, and Appendix C contains the laboratory Certificate of Analysis.

II.D System Performance and Effectiveness

The remediation system at the Site has been out of operation since 1996. However, during its operation, the system performed well.

II.E Containment of Release

Laboratory analysis of ground water samples show that BTEXN, MTBE, and EDB level concentrations continue to decline at the Site. All of these analyzed VOCs were below laboratory detection limits with the exception of one low level of MTBE at CC-4.

No petroleum storage tanks (PSTs) remain at the Site.

III. SUMMARY AND CONCLUSIONS

III.A Trends or Changes in Site Conditions

Ground water chemistry

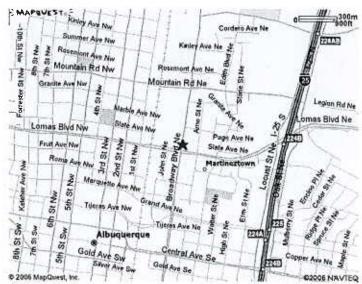
Laboratory analysis of ground water samples indicate that all analyzed VOCs were below laboratory detection limits with the exception of MTBE, which appeared in CC-4 at $3.2~\mu g/L$, well below the ground water action levels. This confirms the results of our December 2005 sampling event at these same wells.

Analysis for dissolved Iron, Lead and Manganese found these dissolved metals below the WQCC standards for drinking water in all four of the monitoring wells sampled, except for two exceedences for dissolved Manganese and one exceedence for dissolved iron. The WQCC standard for dissolved Manganese is 200 μ g/L. CC #1 had a dissolved Manganese level of 290 μ g/L and CC #2 showed dissolved Manganese to be at a concentration of 2,400 μ g/L. The WQCC standard for dissolved Iron is 100 μ g/L. Dissolved iron at CC-1 was 620 μ g/L.

I. INTRODUCTION

R.T. Hicks Consultants, Ltd. (Hicks Consultants) prepared this report for Maloof Company (Maloof), the responsible party, for the Contract Carriers Site at 830 Broadway NE (the Site). The report was prepared in accordance with applicable sections of Part 12 of the New Mexico Environment Department Petroleum Storage Tank Regulations and work plan ID (WPID) 14375, which NMED Petroleum Storage Tank Bureau (PSTB) approved on May 10, 2006.

The Contract Carriers Site is located at 830 Broadway NE, in Albuquerque, New Mexico, see Figure 1. The property lies within an area of light industrial, commercial, and residential use, occupying the northern half of the block bounded by Broadway to the west, a construction site for a new Carls Jr. restaurant and beyond it Lomas Boulevard on the south, Arno Street to the east and Marble Avenue to the north. A new housing development lies to the southeast of the site. The Contract Carriers Site formerly had 3



underground storage tanks situated to the South of the Contract Carriers building: two 8,000-gallon tanks, one for diesel and one for gasoline, and a 500-gallon tank for waste oil. When these tanks were removed in late 1989, contaminated soil was discovered due to a leak in the diesel fuel tank. Subsequent investigations revealed soil and ground water contamination including Benzene, Ethyl benzene, Toulene, Xylenes, (BTEX) and EDC. Eight monitoring wells have been installed, and a ground water treatment (air stripper) system and a soil vapor extraction system (SVES) were installed and operated from mid 1994-1996.

As BTEX in ground water was below NMWQCC standards, the NMED USTB approved shutting the remediation system down in May of 1996. This status report follows up on our previous status report with data collected in May of 2006 and the results of analysis for both VOCs and selected dissolved metals in ground water samples. This report summarizes findings from ground water monitoring activities conducted at the Site on May 17, 2006 in accordance with the Workplan approval for Contract Carriers Site at 830 Broadway NE, dated May 10, 2006 14375

I.A Scope of work

Under the approved work plan the scope of work for the first semi-annual monitoring event includes: 1) measuring fluid levels in seven monitoring wells known to have water, 2) renting a metal detector and searching for a monitoring well that was not located in our previous

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Ground water levels

Ground water elevations and gradient measured during the May 2006 sampling event are within the range of historical observations. Table 3 presents water elevations recorded in 1996, 2005 and 2006. Although ground water levels were higher in May of 2006 than those recorded in December of 2005, overall water levels have been declining in the area. According to the United States Geological Survey's Water Resources Investigation Report 02-4233, water levels near the property are estimated to have dropped 40-60 feet between 1960 and 2002. According to ground water level data in the NMED file for this property and our own sampling events, ground water dropped an average of 0.2 feet per year in CC-1, CC-2, CC-3 and CC-4 between 1995 and 2005.

Table 3. Comparision of Water Elevations at Contract Carriers

Well #	Casing Elevation (ft)	Water Elevation 1996 (ft)	Water Elevation 2005 (ft)	Water Elevation 2006 (ft)
CC-1	4958.47	4902.85	4901.17	4902
CC-2	4959.88	4902.26	4900.46	4901.29
CC-3	4959.41	4903.92	4902.73	4904.41
CC-4	4959.59	4901.67	4899.79	4900.6
CC-5	4959.58	4902.59	4901.08	4901.79
CC-6	4958.81	4902.41	4900.69	not available
CC-7	not available	not available	not available	not available
CC-8	4959.11	4902.48	not available	not available

Ground water flow is to the southeast toward city supply pumping wells. Plate 2 presents ground water elevations and a potentiometric surface map derived from the data gathered in the May 2006 sampling event.

Table 4 presents the amount of saturated column available in surveyed wells.

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Table 4. Well Status at Contract Carriers, May 2006

Well Name	Depth to Water (ft)	Water Level Elevation (ft)	Total Depth (ft)	Saturated Column (ft)	Comments
CC #1	56.47	4920.53	62.3	5.83	bailed dry, difficult to obtain sufficient water to sample
CC #2	58.59	4918.41	64.4	5.81	Bailed dry
CC #3	55	4922	63	8	-
CC #4	58.99	4918.01	71	12.01	5
CC #5	57.79	4919.21	60.5	2.71	insufficient water for recovery, not sampled
CC #6	-		(+X		unable to locate well, not sampled
CC #7	none		48	none	no water encountered, not sampled
CC #8	Ħ.		-	88	unable to locate well, not sampled

Wells in italics not sampled

As noted, re-charge was slow in CC-1 and CC-2 and it was very difficult to obtain sufficient water to sample CC-1 even after substantial time for re-charge. We are concerned that samples from these wells may not be representative of ground water quality in the area as discussed in section III.C.

III.B Assessment of Remediation System

Although no engineered remediation system has been in use at the site since 1996, the analytical data for the wells at Contract Carriers confirms that the system was effective in remediation of historic releases there.

III.C Recommendations

Evaluating data collected from current and past monitoring events at the Contract Carriers Site at 830 Broadway NE, we conclude that VOCs have naturally bioremediated in the ground water below WQCC standard levels.

Dissolved manganese levels are above WQCC standards in CC-1 and CC-2. Dissolved iron is above WQCC standards in CC-1. Ground water levels have dropped in Albuquerque and we observed recharge to be slow during our May 2006 sampling event. In the New Mexico Water Quality Control Commission Regulations 20.6.2.7.Y, "ground water" is defined as "interstitial"

water which occurs in saturated earth material and which is capable of entering a well in sufficient amounts to be utilized as a water supply. [emphasis added]" The recharge rate in the monitoring wells demonstrate that the uppermost five-seven feet of saturated column cannot enter a well in sufficient amounts of water to be utilized as a water supply. Although the underlying aquifer, which has a saturated thickness of several hundred feet or more, does contain "ground water", these wells cannot obtain representative samples. We conclude that the existing well network does not provide representative samples of "ground water" as defined by the WQCC Regulations. Moreover, we conclude that the existing monitoring well network cannot be employed to determine compliance with 20.6.2.4103, specifically:

- B. Ground-water pollution at any place of withdrawal for present or reasonably foreseeable future use, where the TDS concentration is 10,000 mg/L or less, shall be abated to conform to the following standards:
- (1) toxic pollutant(s) as defined in Section 20.6.2.1101 NMAC shall not be present; and
- (2) the standards of Section 20.6.2.3103 NMAC shall be met.

The wells can provide a "worst-case" sample of water in the saturated zone – which is why we can conclude with confidence that hydrocarbon constituents are not present in the aquifer at concentrations that exceed the WQCC Regulatory standards.

As petroleum products are metabolized in the subsurface, anaerobic conditions are typically created as a result. Under anaerobic conditions manganese and iron oxides that form coatings on the rock matrix dissolve into the underground water. The wells at the site draw water from the uppermost portion of the aquifer, where the residual hydrocarbon mass is the greatest (probably non-toxic, long chained hydrocarbons that metabolize slowly). We believe that anaerobic conditions persist in this uppermost portion of the aquifer and are not representative of ground water in the aquifer.

We conclude that fifteen feet of saturated column (minimum) is necessary to achieve a representative sample of ground water in the uppermost aquifer. Such a screen length conforms with NMED PST Bureau guidelines. We recommend sampling the upper 20 feet of the aquifer between CC-1 and CC-2. Because of declining water levels in Albuquerque, we contend that a reasonable person would not install a well with only 15-feet of screen below the water table as the life of such a well would be only a few years. In the absence of advice from a well driller or scientist, it is possible that a reasonable person might install a well that penetrates only the upper 20 feet of the aquifer in the present or reasonably foreseeable future.

If after sampling the upper 20 feet of the aquifer between CC-1 and CC-2 and analyzing the ground water for dissolved manganese it is found that levels are below WQCC standards, we recommend closing the file and plugging and abandoning the wells immediately, as this sample would be the first sample representative of "ground water" from the site in several years. From such data we could conclude that "ground water" does not and has not contained dissolved manganese or iron above WQCC Standards for some time.

Site Name: Contract Carriers Site at 830 Broadway NE

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Date: August 15, 2006

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In the unlikely event that dissolved manganese levels are found to remain above WQCC standards in the upper 20 feet of the aquifer, we recommend installation of an appropriate ground water monitoring network and annual monitoring of natural attenuation of dissolved metals at the property. We recommend using CC-1, CC-2, CC-3, and CC-4 to monitor water level depths only as they cannot provide representative samples of "ground water" at the property.

If you have any questions concerning this communication, please contact Katie Lee or Randall Hicks at 505-266-5004.

Sincerely,

R.T. Hicks Consultants, Ltd.

Katie Lee

Staff Scientist

R.T. Hicks Consultants, Ltd.

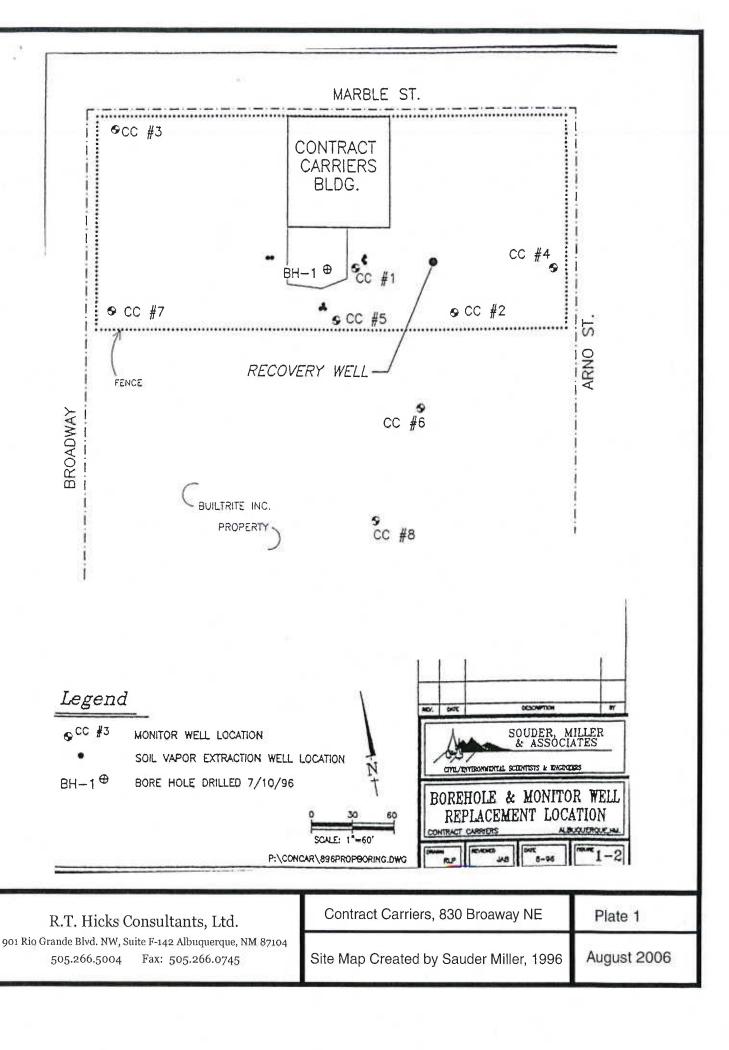
Randall T. Hicks

Principal

Site Name: Contract Carriers Site at 830 Broadway NE USTB Facility (old/new)#: 8601001/27513
Date: August 15, 2006

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Plates



Site Name: Contract Carriers Site at 830 Broadway NE USTB Facility (old/new)#: 8601001/27513

Date: August 15, 2006

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	List of Plates/Figures		
		Included	N/A
Plate 1	Site Map	x	
Plate 2	Water Level Map	x	
Figure 1	Street Map noting site	x	
-9377	Graphs Showing Hydrocarbon Removal over Time		x
	Ground Water Concentration Map		x

SHISHMAN & ASSOCIATES INC.

6501 Wyoming Boulevard NE, Suite C-130 Albuquerque, New Mexico 87109 e-mail: shishone@aol.com fax: 505.797.1272 tel: 505.237.9800

September 4, 2009 Project No. 1051.6

Mr. Bart Faris, Environmental Scientist NMED, Ground Water Quality Bureau 5500 San Antonio NE Albuquerque, New Mexico 87109

Re: Monitoring Well Sampling and Testing

3rd Quarterly Sampling Report No. 1051.4 by AES 830 Broadway Blvd. NE, Albuquerque, NM

MR. FARIS: SHISHMAN & ASSOCIATES INC. (S&A) is pleased to submit the attached 3rd Quarter Monitoring Well Sampling Report No. 1051.4, Wells #SF11 and #CC03, by Advanced Environmental Solutions, Inc. (AES) on behalf of our client, the Sandia Foundation. The tasks performed were detailed in our letter, "Monitoring and Testing Program Phase, CAR for 830 Broadway Blvd. NE, Albuquerque, NM" submitted to the NMED on June 30, 2008.

AES' findings are based on the assumption that the Well #SF11 location, and the resulting data from groundwater sampling, are representative of conditions associated with the "french drain" remediated per the CAR work plan for the property. Laboratory analyses of groundwater samples from Well #SF11 in this quarter included Total RCRA Metals, Iron and Manganese. Per test methods EPA 6010B: Total Recoverable Metals, analytes identified at levels above detection were: Iron $-0.18 \, \text{mg/L}$, Barium $-0.059 \, \text{mg/L}$, Lead $-0.0072 \, \text{mg/L}$, and Manganese $-0.82 \, \text{mg/L}$. Mn is above the standard of $0.2 \, \text{mg/L}$.

In addition, per your question about possible impact of hydrocarbons from the former LUST or background concentrations of manganese (Mn) from other source(s) on site, posed in your 6/25/2009 email, upgradient monitoring well CC#3 was sampled by AES and was analyzed for concentration of Mn. Total Recoverable Manganese was reported as 0.038 mg/L in the upgradient Well #CC03, indicating a possible background concentration of approximately one-half of the 0.82 mg/L detected in Well #SF11.

S&A and AES have performed our services in accordance with our contract with our Client, utilizing the ordinary degree of skill and care practiced by other firms providing similar services in the general vicinity of the site. No other warranty or representation, either express or implied, is made.

In case of questions and/or comments please call us at tel. 505.237.9800.

SHISHMAN & ASSOCIATES INC

Thomas T. Shishman, REM

President

Copies to

Mr. Bob Goodman, Sandia Foundation, w/enclosure

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