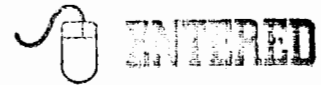


# Tank Management Services inc.



February 7, 1995

Mr. David Nye  
Underground Storage Tank Bureau  
New Mexico Environment Department  
4131 Montgomery Blvd., NE  
Albuquerque, New Mexico 87109

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USTB - ALBO.

RE: Report on the Minimum Site Assessment  
Veterans Administration Medical Center, Albuquerque, New Mexico

Dear Mr. Nye:

On behalf of our client, the U. S. Department of Veterans Affairs and the Veterans Administration Medical Center (VAMC), Tank Management Services Inc. (TMSI) is submitting the above-referenced report on the site investigation performed at the Veterans Administration Medical Center located in Albuquerque, New Mexico.

Please call me at 881-3711 if you have any questions.

Sincerely,

Terri L. Hennessy, P.G.  
Senior Geologist

Enclosure

cc: Mr. Jim Brooks, VAMC, Albuquerque



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**REPORT  
on the  
MINIMUM SITE ASSESSMENT**

at the

**VETERANS ADMINISTRATION MEDICAL CENTER  
ALBUQUERQUE, NEW MEXICO**

prepared for the

**U. S. DEPARTMENT OF VETERANS AFFAIRS  
and the  
VETERANS ADMINISTRATION MEDICAL CENTER  
ALBUQUERQUE, NEW MEXICO**

FEBRUARY 1995

**Tank Management Services inc.**

Albuquerque, New Mexico

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# **Tank Management Services inc.**

## **REPORT on the MINIMUM SITE ASSESSMENT**

at the

**VETERANS ADMINISTRATION MEDICAL CENTER  
ALBUQUERQUE, NEW MEXICO**

prepared for the

**U. S. DEPARTMENT OF VETERANS AFFAIRS  
and the  
VETERAN ADMINISTRATION MEDICAL CENTER**

February 7, 1995

This report was prepared and reviewed by the Tank Management Services Inc. personnel listed below. The undersigned are personally familiar with the information submitted in the report and the attached documents.

Prepared By: *Terri L. Hennessy*  
Terri L. Hennessy, P.G.  
Senior Geologist

Reviewed By: *Thomas E. Lewis*  
Thomas E. Lewis  
President

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### **Tables**

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### **Attachments**

- Attachment 1 PROCEDURES for FIELD OPERATIONS
- Attachment 2 SEDIMENT BORING LOGS
- Attachment 3 LABORATORY DATA SHEETS and CHAIN-OF-CUSTODY FORMS

## 1.0 INTRODUCTION and BACKGROUND

Tank Management Services Inc. (TMSI) was retained by U. S. Department of Veterans Affairs and the Veterans Administration Medical Center (VAMC) to provide environmental services related to the investigation of a potential release of hydrocarbons at VAMC. The site, known as the Veterans Administration Medical Center, is located southeast of the intersection of San Mateo Boulevard and Gibson Avenue at 2100 Ridgecrest SE in Albuquerque, New Mexico. The site location is indicated on Figure 1; a site plan is included as Figure 2. Four steel 5,000-gallon underground storage tanks (USTs) used to store diesel fuel are located at the site. A UST system schematic is included as Figure 3. In October 1994, a diesel fuel odor and stained sediments were noted during the removal of the pump near UST #3. The source of the diesel fuel was identified as a damaged product delivery line; the line was repaired at that time. Mr. Jim Brooks, VAMC Industrial Hygienist, contacted the New Mexico Environment Department (NMED) UST Bureau to report the suspected release. This report describes the results of the on-site investigation conducted to evaluate the subsurface impacts of the release.

## 2.0 SCOPE of WORK

Based on interaction with the NMED and discussions with the client, the following scope of work was performed:

- ◆ Preparation of a site-specific health and safety plan.
- ◆ Drilling and sampling of five sediment borings.
- ◆ Interaction with the NMED, the client and subcontractors.
- ◆ Preparation of this report.

Ms. Terri Hennessy, Senior Geologist, acted as project manager and was responsible for project management and report preparation. Mr. Steven Heaton, Geologist, was responsible for sample collection. The investigation was carried out using standard TMSI and generally-accepted environmental protocols for hydrocarbon contamination investigations. This includes appropriate safety considerations, sample collection and storage, decontamination of equipment, and documentation. The field methodology used is summarized in Attachment 1.

## 3.0 LIMITATIONS

This report has been prepared for the exclusive use of the VAMC and discusses the results of an investigation of a release of hydrocarbons to the environment at the VAMC in Albuquerque, New Mexico. Use of this report outside its intended scope may be inappropriate. All of the work has been performed in accordance with guidelines established by local regulatory agencies as well as accepted environmental science and engineering practices. No other warranty is expressed or implied.

#### 4.0 GEOLOGY and HYDROGEOLOGY

The site is located in the Albuquerque Basin; basin-fill deposits of the Tertiary Santa Fe Group underlie the site. The depth to groundwater at the site is reported to be 480 feet. The groundwater gradient in the vicinity of the site is typically to the south-southeast. The nearest surface water body is the Rio Grande, located approximately 4.25 miles west of the site.

The stratigraphy of the subsurface at the site is typical of alluvial deposits, and consists of clay, silt, and sand. Boring VSB1 was advanced to a depth of 62 feet during the January 1995 program; perched groundwater was not encountered in that boring. Copies of the sediment boring logs are provided in Attachment 2.

#### 5.0 INVESTIGATION of SEDIMENTS

On January 17, 1995, TMSI drilled and sampled five sediment borings at the site as part of the on-site investigation. The locations of the borings, designated VSB1 - VSB5, are indicated on Figure 3. The borings were drilled to define the extent of hydrocarbons in the sediments, and to obtain information to characterize the stratigraphy of the site. The total depths of the borings below grade, including the bottom sample, ranged from 22 to 62 feet.

TMSI collected sediment samples from the borings at approximately five-foot intervals. Selected samples were screened for hydrocarbons using a MiniRae photoionization detector (PID) equipped with a 10.2 eV lamp and a Hanby field analytical kit. The generalized stratigraphy of each boring and the results of field screening of sediment samples using the PID and Hanby kit are described in Table 1. Due to a malfunction of the PID, TMSI was unable to screen any samples other than the samples collected over the interval 5 - 20 feet in VSB1 for hydrocarbon vapors.

Three sediment samples from boring VSB1 and one sample each from borings VSB2 - VSB5 were submitted to Hall Environmental Analysis Laboratory and analyzed for total recoverable petroleum hydrocarbons (TPH) as diesel fuel using EPA Method 8015 Modified. The results of the analyses are listed in Table 1. A copy of the laboratory report and chain-of-custody form is included as Attachment 3.

The first boring, VSB1, was drilled near the point of the release. That boring was advanced to a total depth of 62 feet, approximately 50 feet below the bottom of the USTs. Perched groundwater was not encountered in that boring. Sediment samples collected over the interval 5 to 20 feet below grade were field screened for hydrocarbons using a PID. Sediment samples collected at the depths of 10, 20, 30, 40 and 50 feet were field screened for hydrocarbons using

a Hanby field analytical kit. Samples from the depths of 10, 15 and 20 feet were submitted to the laboratory and analyzed for TPH. Hydrocarbon concentrations exceeding the state action level of 100 ppm were not measured in any sample. Hydrocarbons were not detected in any sample collected from a depth of 20 feet or deeper.

Four additional borings, designated VSB2 - VSB5, were drilled in locations surrounding the UST system. Each of those borings were drilled to a depth of 22 feet; hydrocarbons were not detected in the samples collected from those borings.

## 6.0 CONCLUSIONS and RECOMMENDATIONS

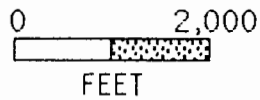
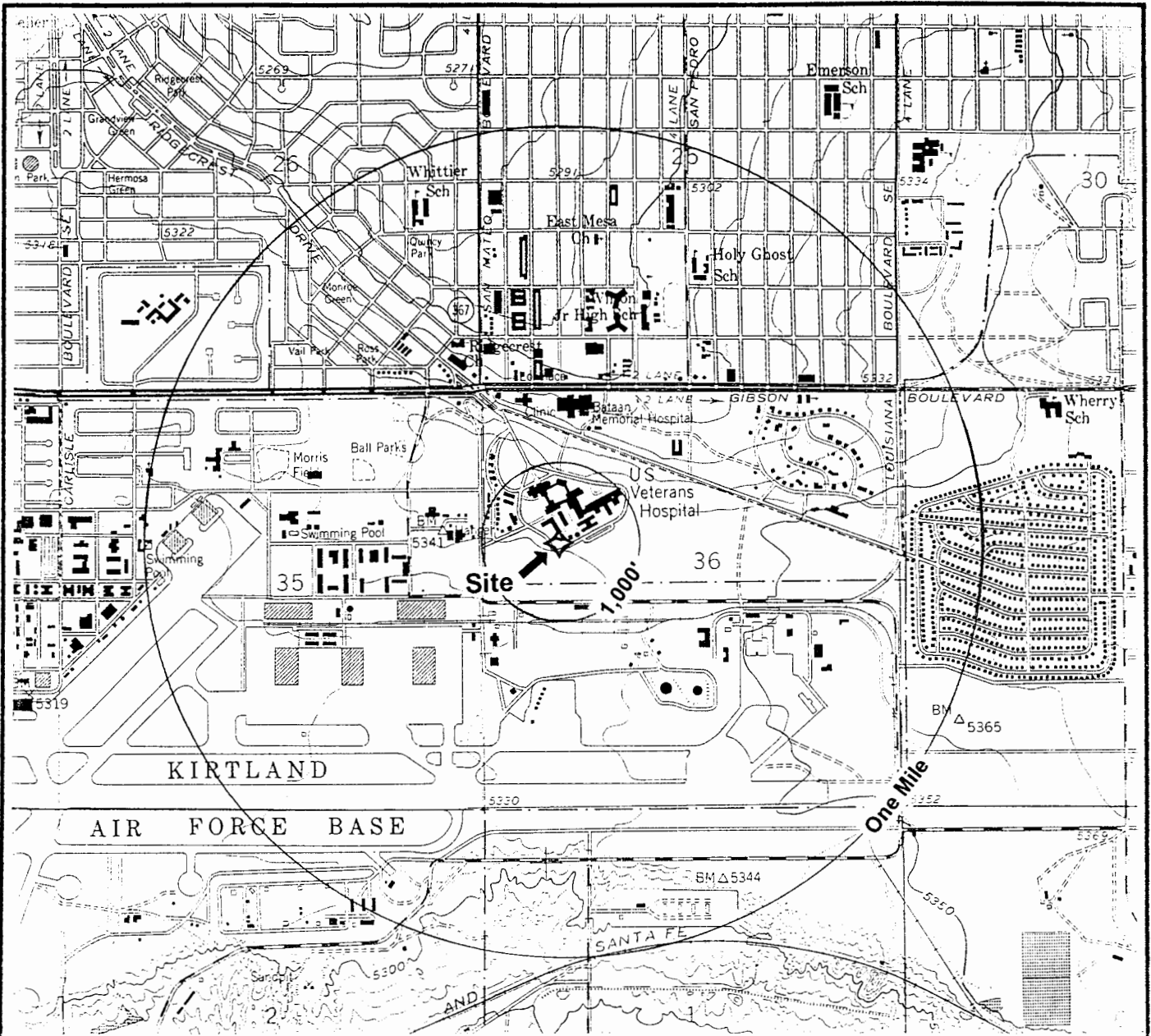
Based on the results of the subsurface investigation, TMSI provides the following conclusions:

- ◆ Sediments at the site have been minimally impacted by hydrocarbons released from the damaged piping. Concentrations of hydrocarbons exceeding the state action level of 100 ppm were not detected in any sample collected during the January 1995 investigation. Consequently, the release does not appear to pose a threat to human health and environment.
- ◆ At least 50 feet of separation exists between the maximum depth of hydrocarbon-impacted sediments and groundwater at the site. Groundwater was not encountered during the January drilling program.

TMSI recommends no further action at the site at this time.



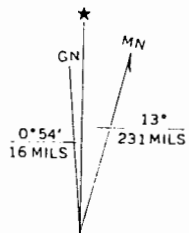
# FIGURES



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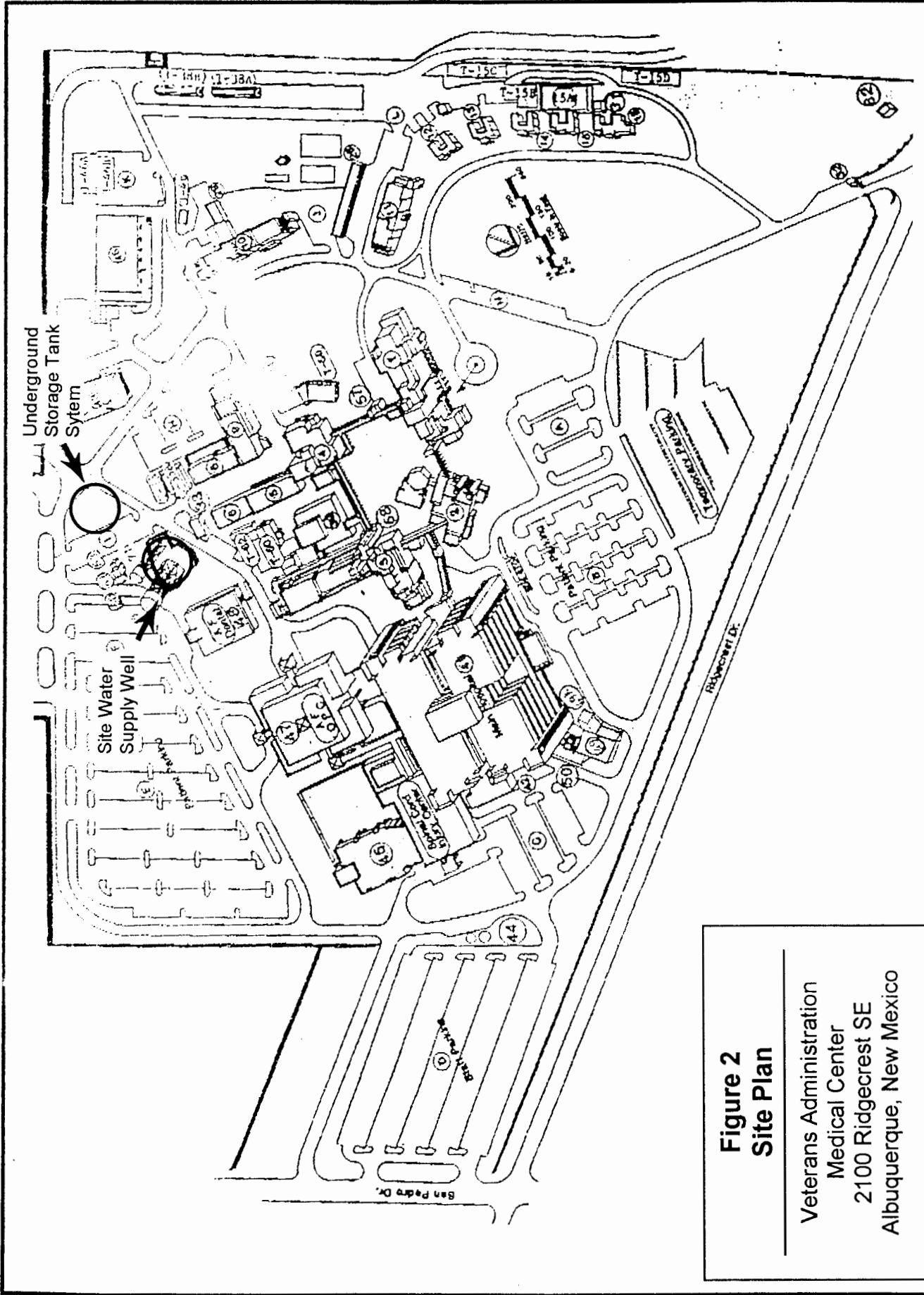


### Figure 1 Site Location Map

Veterans Administration  
 Medical Center  
 2100 Ridgcrest SE  
 Albuquerque, New Mexico

Tank Management Services inc.

November 1994

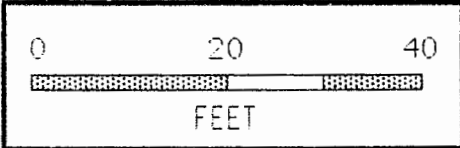
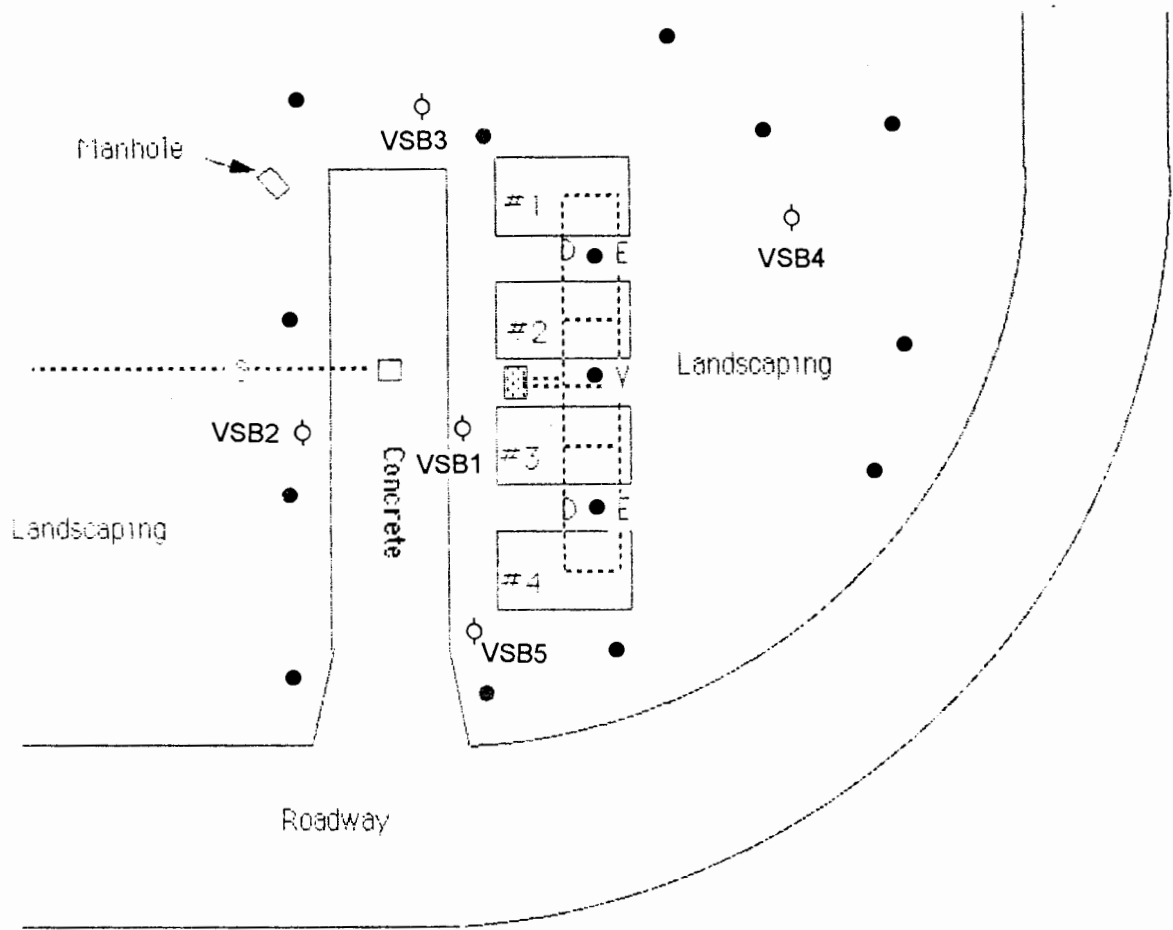


**Figure 2  
Site Plan**


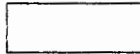
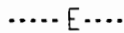


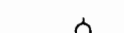


Veterans Administration  
 Medical Center  
 2100 Ridgecrest SE  
 Albuquerque, New Mexico

Tank Management Services, Inc.

November 1994



**LEGEND**

-  Dispenser
-  Underground Storage Tank
- Underground Utilities**
-  E = Electric
-  V = Vent Line
-  D = Product Delivery Line
-  S = Sewer
-  Sediment Boring
-  Cathodic Protection System Monitoring Point

**Figure 3  
Site Map**

---

Veterans Administration  
 Medical Center  
 2100 Ridgecrest SE  
 Albuquerque, New Mexico

Tank Management Services inc.

January 1995

**TABLES**

**Table 1. Generalized Stratigraphy, Results of Field Screening of Sediment Samples using a Photoionization Detector (PID) and Hanby Field Analysis Kit, and Results of Laboratory Analyses of Selected Sediment Samples**

Depth Below Grade (feet)	SEDIMENT BORING															
	VSB1				VSB2			VSB3			VSB4			VSB5		
	TPH		Hanby	PID	TPH		Hanby	TPH		Hanby	TPH		Hanby	TPH		Hanby
5																
10	SAND	6.0	10	21	SAND			SAND			SAND			SAND		
15		7.8		ND												
20	CLAY				CLAY	ND	ND	CLAY	ND	ND	CLAY	ND	ND	CLAY	ND	ND
25	SAND															
30			ND													
35	CLAY															
40			ND													
45	gravelly SAND															
50	SAND		ND													
55	CLAY															
60	SAND															
	<b>TD = 62'</b>				<b>TD = 22'</b>			<b>TD = 22'</b>			<b>TD = 22'</b>			<b>TD = 22'</b>		

**Notes:**  
 ND = Not Detected  
 TD = Total Depth  
 PID and Hanby Measurements in ppm (parts-per-million).  
 TPH = Total Petroleum Hydrocarbons in mg/kg (ppm) using EPA Method 8015 Modified.  
 Dates of analysis and detection limits are listed on the laboratory report (Attachment 3).

**Attachment 1**

**PROCEDURES for FIELD OPERATIONS**

## DECONTAMINATION PROCEDURES

All non-disposable equipment used in the process of sediment and groundwater sampling is decontaminated in the following manner.

1. Equipment is cleaned of gross contamination (visible contaminants, sediments and other foreign matter) by wiping with paper towels and rinsing with tap water.
2. A solution of tap water or distilled water and laboratory grade detergent (Alconox) is prepared in a clean plastic wash basin. Equipment is immersed in this solution and scrubbed with new scrub brushes.
3. If product was previously encountered, equipment is washed with a solution of tap water and liquid dishwashing soap (Dawn or Palmolive) prior to immersion in the Alconox solution.
4. The equipment is removed from the detergent solution and rinsed with tap water.
5. If product was previously encountered, equipment is rinsed again with isopropyl alcohol.
6. Equipment is given a final rinse using distilled water.
7. Decontaminated equipment is stored in either a clean plastic bucket sealed with aluminum foil or new plastic bags.
8. Personnel wear appropriate personal protection equipment such as disposable latex gloves during the decontamination process.



## SEDIMENT VAPOR SCREENING PROCEDURES

Sediment samples are screened for the presence of hydrocarbon vapors in the following manner.

1. A one-pint or larger capacity mason jar is filled approximately half full of sample.
2. The top of the jar is sealed with clean, new aluminum foil.
3. The sample is warmed to a temperature of approximately 60 - 80 degrees Fahrenheit, using a warm water bath or vehicle defroster if necessary.
4. Hydrocarbon vapors are allowed to collect in the headspace of the sample jar for approximately 10 - 15 minutes. During this time period, the sample is shaken vigorously for a total of one minute.
5. The aluminum foil seal is pierced with the probe of a photoionization detector (PID), and the highest (peak) measurement read and recorded on the sediment boring log.
6. The sample is transferred to a resealable plastic bag and labeled in the following manner:

Project Name and Number  
Date  
Boring Number and Depth of Collection  
Company Name  
Time of Collection  
PID Measurement and Time of Measurement

## SEDIMENT SAMPLING PROCEDURES

Sediment samples are collected using the procedures outlined below.

1. Sediment samples are collected at selected intervals using a decontaminated split-spoon sampler supplied by the drilling contractor. A description of the sample lithology is recorded on a boring log.
2. Upon removal from the sampler, samples selected for submittal to a laboratory are placed in containers provided by the laboratory and labeled in the following manner:

Project Name and Number  
Date  
Boring Number and Depth of Collection  
Company Name

Selected material remaining in the sampler is used for sediment vapor screening.

3. Samples selected for laboratory analyses are then placed in a cooler filled with ice.
4. Sampling personnel wear appropriate personal protection equipment such as disposable latex gloves during the sampling operation.
5. Disposable equipment is properly disposed and other equipment appropriately decontaminated as described in the decontamination procedures prior to retrieving the next sediment sample.
6. The appropriate chain-of-custody forms are completed and the samples shipped for overnight delivery to the analytical laboratory.

**Attachment 2**

**SEDIMENT BORING LOGS**

# Tank Management Services inc.

P. O. Box 26776

Albuquerque, New Mexico

# Sediment Boring Log

Boring Number: VS 131

Page 1 of 2

CLIENT: <u>VETERANS AFFAIRS</u>	DATE: <u>1/17/95</u>
Location: <u>VAMC</u>	Start Time: <u>9:15</u>
Driller & Equipment: <u>SHIB INC CME-55 3/4 HSA</u>	Finish Time: <u>—</u>
Field Instrument (FID, <u>PID</u> , etc.): <u>10,2 eV Lamp</u>	Logged By: <u>HENTON</u>

DEPTH BELOW SURFACE (feet)	PID, FID, etc. (ppm)	SAMPLE		GRAPHIC LOG	SEDIMENT DESCRIPTION	COMMENTS
		Interval and Type, Recovery (inches), SPT				
5'						
10'	15	3"	1-1-1		FINE-MED SAND WITH 30% CLAY MUDS <SEMI MOIST> POORLY SORTED	9:49 / 10:28
15'	21	16"	1-2-1		MED-COARSE GRAINED SAND <SEMI MOIST> WITH CLASTS < 5MM. OLIVINE + QZ CLASTS DOMINANT	9:55 / 10:28
20'	NA	6"	2-2-2-3		RED CLAY WITH 40% FINE GR. SAND <MOIST> MUSCOVITE + BIOTITE DOMINANT	9:58 / 10:28
25'	NA	18"	3-10-7-9		DENSE RED CLAY <MOIST> AUSITE CLASTS TO 20MM - WELL SORTED	10:09 / 10:28
25'	NS	12"	9-5-4-7		POORLY SORTED MED GR. SAND <SEMI MOIST> CLASTS TO 10MM	10:31 / —

HOY=10

LAB - HOY=1311

# Tank Management Services inc.

P. O. Box 26776

Albuquerque, New Mexico

# Sediment Boring Log

CLIENT: <u>VETERANS AFFAIRS</u>	Boring Number: <u>VSB1</u>
Location: <u>VAMC</u>	Page <u>2</u> of <u>2</u>
Driller & Equipment: <u>SITIB INC CME-55 3 1/4 HSA</u>	DATE: <u>1/17/95</u>
Field Instrument (FID, <u>PID</u> , etc.): <u>10.2 eV Lamp</u>	Start Time: <u>→</u>
	Finish Time: <u>11:38</u>
	Logged By: <u>ITEADN</u>

DEPTH BELOW SURFACE (feet)	PID, FID, etc. (ppm)	SAMPLE		GRAPHIC LOG	SEDIMENT DESCRIPTION	COMMENTS
		Interval and Type, Recovery (inches), SPT				
30'	NS	18"	5-5 5-7		SAND WITH 30% CLAY + FINES POORLY SORTED <semi moist>	10:57 / -
35'	NS	24"	5-7 10-14		DENSE RED CLAY <moist> WELL SORTED CLEAN CLAY	10:41 / -
40'	NS	12"	7-7 7-9		GRAVELLY - SANDY <clay> POORLY SORTED <moist>	10:48 / -
45'	NS	18"	6-6 7-7		POORLY SORTED GRAVELLY SOIL <semi moist> COBBLE CLASTS	10:53 / -
50'	NS	18"	5-7 9-9		REDDISH-BROWN FINE GR. SAND V. WELL SORTED <semi moist>	11:08 / -
55'	NS	18"	5-6 5-8		POORLY SORTED SANDY CLAY <moist> 25% SAND 75% CLAY + FINES	11:27 / -
60'	NS		5-7 7-11		MED SORTED FINE GR SAND <semi moist> NA FETOSPHER CLASTS <10mm.	11:38 / - BORELOG.SAM 01/06/94

HBY-B1  
LAB

HBY-B1  
LAB

HBY-B1  
LAB

LAB

# Tank Management Services inc.





P. O. Box 26776

Albuquerque, New Mexico

## Sediment Boring Log

Boring Number: <i>VSB 2</i>
Page <i>1</i> of <i>1</i>
DATE: <i>1/17/95</i>
Start Time: <i>13:08</i>
Finish Time: <i>13:38</i>
Logged By: <i>HEATON</i>

CLIENT: <i>VETERANS AFFAIRS</i>
Location: <i>VAMC</i>
Driller & Equipment: <i>SHIB</i>
Field Instrument (FID, <u>PID</u> , etc.): <i>10.2 eV Lamp</i>

DEPTH BELOW SURFACE (feet)	PID, FID, etc. (ppm)	SAMPLE		GRAPHIC LOG	SEDIMENT DESCRIPTION Color, relative density or consistency, moisture, grain shape and type, structure, cementation, organics, unified soil classification symbol.	COMMENTS Drilling progress, lost circulation, type of deposit, problems, etc.
		Interval and Type, Recovery (inches), SPT				
5'						
10'	<i>NS</i>	<i>8"</i>	<i>3-3</i> <i>3-3</i>		<i>FINE GR. SAND &lt;semi moist&gt;</i> <i>w QUARTZ CLASTS &lt; 5mm</i> <i>SOME FINES PRESENT.</i>	<i>13:15 / -</i>
15'	<i>NS</i>	<i>16"</i>	<i>3-1</i> <i>2-1</i>		<i>FINE - MED GRAINED SAND &lt;semi moist&gt;</i> <i>V. POORLY SORTED / CLASTS &lt; 10mm</i>	<i>13:20 / -</i> LAB
20'	<i>NS</i>	<i>18"</i>	<i>3-3</i> <i>3-5</i>		<i>FINE GR. SAND w 20% CLAY</i> <i>POORLY SORTED / NO CLASTS</i> <i>&lt;semi moist&gt;</i>	<i>13:26 / -</i>
	<i>NS</i>	<i>18"</i>	<i>8-11</i> <i>13-9</i>		<i>RED CLAY &lt;moist&gt;</i> <i>SOME CLASTS, &lt; 5mm</i>	<i>13:31 / -</i> LAB HANDY=BH

# Tank Management Services inc.





P. O. Box 26776

Albuquerque, New Mexico

# Sediment Boring Log

Boring Number: <i>VSB 3</i>
Page <i>1</i> of <i>1</i>
DATE: <i>1/17/15</i>
Start Time: <i>13:41</i>
Finish Time: <i>14:02</i>
Logged By: <i>S. HEATON</i>

CLIENT: <i>VETERANS AFFAIRS</i>
Location: <i>VAMC</i>
Driller & Equipment: <i>SH13</i>
Field Instrument (FID, PID, etc.): <i>10.2 cV LAMP</i>

DEPTH BELOW SURFACE (feet)	PID, FID, etc. (ppm)	SAMPLE		GRAPHIC LOG	SEDIMENT DESCRIPTION	COMMENTS
		Interval and Type, Recovery (inches), SPT				
5'						
10'	<i>NS</i>	<i>16"</i>	<i>3-3 4-4</i>		<i>poorly sorted FINE GR. SAND WITH 20% FINES - some GTE CLASTS &lt; 5mm &lt; DRY &gt;</i>	<i>13:41 / -</i>
15'	<i>NS</i>	<i>12"</i>	<i>2-2 3-4</i>		<i>med sorted FINE-MED RED SAND &lt; SEMI MOIST &gt; clasts &lt; 5mm</i>	<i>13:52 / -</i>
20'	<i>NS</i>	<i>18"</i>	<i>1-1 2-3</i>		<i>well sorted FINE-MED GR. SAND &lt; SEMI MOIST &gt; NO CLASTS present</i>	<i>13:56 / -</i>
	<i>NS</i>	<i>12"</i>	<i>3-7 12-12</i>		<i>RED CLAY &lt; MOIST &gt; (NO FINES present) NO CLASTS</i>	<i>14:02 / -</i>

LAB

LAB #BY=DL





# Tank Management Services inc.

P. O. Box 26776 • Albuquerque, New Mexico

# Sediment Boring Log

Boring Number: <i>VSB 4</i>
Page <i>1</i> of <i>1</i>
DATE: <i>1/17/95</i>
Start Time: <i>14:10</i>
Finish Time: <i>14:41</i>
Logged By: <i>HEATON</i>

CLIENT: <i>VETERANS AFFAIRS</i>
Location: <i>VAMC</i>
Driller & Equipment: <i>SHB INC.</i>
Field Instrument (FID, <u>PID</u> , etc.): <i>10.2 eV LAMP</i>

DEPTH BELOW SURFACE (feet)	PID, FID, etc. (ppm)	SAMPLE		GRAPHIC LOG	SEDIMENT DESCRIPTION Color, relative density or consistency, moisture, grain shape and type, structure, cementation, organics, unified soil classification symbol.	COMMENTS Drilling progress, lost circulation, type of deposit, problems, etc.
		Interval and Type,	Recovery (inches), SPT			
5'						
10'	<i>NS</i>	<i>10"</i>	<i>2-3 5-5</i>		<i>FINE GR SAND w CLASTS &lt; 20MM &lt; DRY &gt;</i>	<i>14:18 / -</i>
15'	<i>NS</i>	<i>3"</i>	<i>3-3 3-4</i>		<i>MED SORTED FINE - MED GRAINED SAND &lt; SEMI MOIST &gt;</i>	<i>14:26 / -</i>
20'	<i>NS</i>	<i>12"</i>	<i>3-3 5-5</i>		<i>RED CLAY WITH SOME MED GR. SAND. &lt; SEMI MOIST &gt; NO CLASTS</i>	<i>14:31 / -</i>
	<i>NS</i>	<i>18"</i>	<i>2-3 4-4</i>		<i>DENSE CLAY &lt; V. MOIST &gt; NO CLASTS</i>	<i>14:41 / -</i>

LAB

LAB



# Tank Management Services inc.

P. O. Box 26776

Albuquerque, New Mexico

# Sediment Boring Log

Boring Number: <i>VS B 5</i>
Page <i>1</i> of <i>1</i>
DATE: <i>1/17/95</i>
Start Time: <i>15:11</i>
Finish Time: <i>15:23</i>
Logged By: <i>HEATON</i>

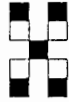
CLIENT: <i>VETERANS AFFAIRS</i>
Location: <i>VAMC</i>
Driller & Equipment: <i>SHB inc.</i>
Field Instrument (FID, <u>PID</u> etc.): <i>10.2 eV LAMP</i>

DEPTH BELOW SURFACE (feet)	PID, FID, etc. (ppm)	SAMPLE		GRAPHIC LOG	SEDIMENT DESCRIPTION	COMMENTS
		Interval and Type, Recovery (inches), SPT				
<i>5'</i>				<i>Blow count</i>		
<i>10'</i>	<i>NS</i>	<i>-</i>	<i>-</i>		<i>NO SAMPLE AVAILABLE (STONE IN STORE)</i>	<i>15:11 / -</i>
<i>15'</i>	<i>NS</i>	<i>6"</i>	<i>2-3</i> <i>3-3</i>		<i>FINE-MED GRAINED SAND</i> <i>&lt;V. MOIST&gt; CLAST &lt; 20 mm.</i>	<i>15:16 / -</i>
<i>20'</i>	<i>NS</i>	<i>12"</i>	<i>5-3</i> <i>3-7</i>		<i>DENSE RED CLAY &lt;MOIST&gt;</i> <i>NO CLASTS (15% FINE SAND)</i>	<i>15:20 / -</i>
	<i>NS</i>	<i>16"</i>	<i>3-4</i> <i>3-3</i>		<i>DENSE RED CLAY &lt;MOIST&gt;</i> <i>NO FINES.</i>	<i>15:23 / -</i>

LA13

**Attachment 3**

**LABORATORY DATA SHEETS  
and  
CHAIN-OF-CUSTODY FORMS**



**Hall Environmental  
Analysis Laboratory**

Hall Environmental Analysis Laboratory  
2403 San Mateo NE, Suite P-13  
Albuquerque, NM 87110  
(505) 880-1803

1/19/95

Tank Management Services, Inc.  
P. O. Box 26776  
Albuquerque, NM 87125

Dear Ms. Terri Hennessy,

Enclosed are the results for the analyses that were requested. These were done according to EPA procedures or the equivalent.

Detection limits are determined by EPA methodology. No determination of compounds below these levels (denoted by the < sign) has been made.

Please don't hesitate to contact me for any additional information or clarifications.

Sincerely,

1/24/95

Scott Hallenbeck, Lab Manager

Project: VAMC

Results for sample: VSB1/10'-12'

Date collected: 1/17/95	Date received: 1/18/95
Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501034-1
Project Manager: Terri Hennessy	Sampled by: Steve Heaton
Matrix: Non-Aqueous	

Test: EPA 8015 Modified

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	6.0	PPM (MG/KG)

DNOP (Surrogate) Recovery = 116 %

Dilution Factor = 1

**Results for sample: VSB1/15'-17'**

Date collected: 1/17/95	Date received: 1/18/95
Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501034-2
Project Manager: Terri Hennessy	Sampled by: Steve Heaton
Matrix: Non-Aqueous	

**Test: EPA 8015 Modified**

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	7.8	PPM (MG/KG)

DNOP (Surrogate) Recovery = 120 %

Dilution Factor = 1

**Results for sample: VSB1/20'-22'**

Date collected: 1/17/95	Date received: 1/18/95
Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501034-3
Project Manager: Terri Hennessy	Sampled by: Steve Heaton
Matrix: Non-Aqueous	

**Test: EPA 8015 Modified**

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	<5.0	PPM (MG/KG)

DNOP (Surrogate) Recovery = 119 %

Dilution Factor = 1

**Results for sample: VSB2/20'-22'**

Date collected: 1/17/95	Date received: 1/18/95
Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501034-4
Project Manager: Terri Hennessy	Sampled by: Steve Heaton
Matrix: Non-Aqueous	

**Test: EPA 8015 Modified**

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	<5.0	PPM (MG/KG)

DNOP (Surrogate) Recovery = 115 %

Dilution Factor = 1

**Results for sample: VSB3/20'-22'**

Date collected: 1/17/95	Date received: 1/18/95
Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501034-5
Project Manager: Terri Hennessy	Sampled by: Steve Heaton
Matrix: Non-Aqueous	

**Test: EPA 8015 Modified**

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	<5.0	PPM (MG/KG)

DNOP (Surrogate) Recovery = 126 %

Dilution Factor = 1



**Results for sample: VSB4/20'-22'**

Date collected: 1/17/95	Date received: 1/18/95
Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501034-6
Project Manager: Terri Hennessy	Sampled by: Steve Heaton
Matrix: Non-Aqueous	

**Test: EPA 8015 Modified**

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	<5.0	PPM (MG/KG)

DNOP (Surrogate) Recovery = 119 %

Dilution Factor = 1

**Results for sample: VSB5/20'-22'**

Date collected: 1/17/95	Date received: 1/18/95
Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501034-7
Project Manager: Terri Hennessy	Sampled by: Steve Heaton
Matrix: Non-Aqueous	

**Test: EPA 8015 Modified**

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	<5.0	PPM (MG/KG)

DNOP (Surrogate) Recovery = 122 %

Dilution Factor = 1

## Results for QC: Reagent Blank

Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: RB 1/18
Project Manager: Terri Hennessy	
Matrix: Non-Aqueous	

### Test: EPA 8015 Modified

<u>Compound</u>	<u>Amount</u>	<u>Units</u>
Diesel	<5.0	PPM (MG/KG)

DNOP (Surrogate) Recovery = 111 %

Dilution Factor = 1

### Results for QC: Matrix Spike / Matrix Spike Dup

Date extracted: 1/18/95	Date analyzed: 1/19/95
Client: Tank Management Services	
Project Name: VAMC	HEAL #: 9501028-2 MS/MSD
Project Manager: Terri Hennessy	
Matrix: Non-Aqueous	Units: PPM (MG/KG)

#### Test: EPA 8015 Modified

<u>Compound</u>	<u>Sample Result</u>	<u>Amount Added</u>	<u>Matrix Spike</u>	<u>MS %</u>	<u>MS Dup</u>	<u>MSD %</u>	<u>RPD</u>
Diesel	<5.0	51	49	96	50	98	2

HALL ENVIRONMENTAL ANALYSIS LABORATORY  
 2403 SAN MATEO NE, SUITE P-13 • ALBUQUERQUE, NM 87110 • (550) 880-1803

CHAIN-OF-CUSTODY RECORD

CLIENT:  
 TANK MANAGEMENT SERVICES INC.

PROJECT MANAGER:  
 TERRI HENNESSY

ANALYSIS REQUEST

ADDRESS:  
 3323 Stanford NE  
 ABQ 87107

PHONE #:  
 881-3711  
 FAX #:  
 884-8858

PROJECT NAME:  
 VAMC

SAMPLER:  
 Steve Heaton

PROJECT #:  
 7

DATE	TIME	MATRIX	SAMPLE I.D. NO.	NUMBER/ VOLUME	PRESERVATIVE			BTEX (METHOD 602)	BTEX + MTBE (602)	TEH (METHOD 8015 MOD) / DIESEL OILS	BTEX + TEH COMBINATION	TPH (METHOD 418.1)	601/602 VOLATILES	EDB (METHOD 504.1)	EDC	610 (PNA OR PAH)	AIR BUBBLES OR HEADSPACE (Y OR N)	SAMPLES COLD: (Y or N)
					HgCl <sub>2</sub>	HgCl	OTHER											HEAL#
1-17-95		SOIL	VSB1 / 10'-12'	40z						X							N	9501034-1
			↓ / 15'-17'							X							N	-2
			↓ / 20'-22'							X							N	-3
			VSB2 / 20'-22'							X							N	-4
			VSB3 /							X							N	-5
			VSB4 /							X							N	-6
			VSB5 /							X							N	-7

RELINQUISHED BY: (Signature)  
 Terri Hennessy

DATE:  
 1-18-95

TIME:  
 12:10

RECEIVED BY:  
 Jerry Phil

REMARKS:

RELINQUISHED BY: (Signature)

DATE:

TIME:

RECEIVED BY: