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SOIL REMEDIATION REPORT

1200 SAN ANTONIO AVENUE ALAMEDA, CALIFORNIA

July 20, 1993

Prepared for: Mr. Peter Templeton 1200 San Antonio Avenue Alameda, California

Benjamin I. Mira Project Geologist

James A. Jacobs, RG Principal Geologist NO. 4815

SOIL REMOVAL

On June 17, 1993, approximately 18 cubic yards of soil were excavated from two areas; 1) where a former underground storage tank (UST) was present, and 2) near a concrete vault at the residential property at 1200 San Antonio Avenue in Alameda, California (Figures 1 through 3).

Prior to the commencement of work, a soil removal workplan and permits had been prepared by Artesian Environmental Consultants (Artesian) and submitted to and approved by the Alameda County Environmental Health Department.

The soil excavation was arranged by Artesian (State of California General Engineering Contractor's license with Hazardous Material Removal Certificate #624461). Mr. Doug Baarley of Baarley Backhoe Company operated the backhoe. Witnesses to the soil excavation were Mr. Doug Baarley of Baarley Backhoe, geologist Mr. Benjamin Mira, and field technician Mr. John Taylor, both of Artesian.

Photographs were taken at several times during the excavation and backfilling activities. The excavated dimensions of the tank pit were thirteen feet long, five feet wide, and eight feet deep before the sampling took place. Groundwater was not encountered in the excavation. No soil staining or discoloration was detected although odor was detected in the excavated material from the tank pit once it was stockpiled.

Near the concrete vault, excavation was done with a hand shovel down to 3.5 feet before sampling was done. The original depth of the small pit was 2.5 feet. The soil stockpile was placed on a plastic sheeting, covered with more plastic sheeting, and held down with stakes. The excavated pit was fenced off with five feet high mesh material.

Backfilling of the pits was completed on July 1, 1993, with all the excavated material hauled off site to BFI, Livermore, Class III landfill. The waste manifest is included in Appendix C. New backfill material was brought on site to fill the tank pit and the hole by the concrete wall, and was compacted using a 100 pound compactor.

SOIL SAMPLING

Soil samples, BP-1, BP-2, and BP-3, were collected in native brown sandy soil at approximately 8.0 feet below ground surface. Soil sample SP-1 was collected 3.5 feet below ground surface. Two soil stockpile samples (CS and DS) were collected for the approximately 18 cubic yards of excavated soil.

The soil samples were collected by project geologist, Mr. Benjamin Mira, in a pre-cleaned, thin-walled brass tube, six inches long and about 1.5 inch in the outside diameter. The samples were collected in a soil sampler which was driven using a 12-pound slide hammer. Each soil sample was immediately capped with both pre-cut teflon sheets at each end and plastic caps. The soil samples were then hermetically sealed in zip-lock plastic bags, labeled, stored and transported in a refrigerated environment for analysis under Chain of Custody by Chromalab of San Ramon, California, a State Certified laboratory. Sampling procedures are described in Artesian Standard Operating Procedures (SOP), Appendix A.

The samples were tested for the presence of total petroleum hydrocarbons as diesel (TPHd) by EPA Method 3550/8015, as well as benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020.

The sample results are summarized in Table 1. TPH-d was detected at 33 parts per million (ppm) in samples BP-1 and BP-2 of the tank pit, and 47 ppm in sample DS of the stock pile. Sample CS reported contamination below levels of detection common in the late motor oil range, but equal to 16 ppm if quantified as diesel. All samples were below the detection limit for the analyzed BTEX compounds. The laboratory data sheets and chain of custody are included in Appendix B.

CONCLUSIONS

Based on laboratory analytic results, two of the three samples taken from the tank pit contained detectable levels of diesel contamination, the other one did not. The sample near the concrete vault came up non-detect also. The soil samples CS and DS which were collected from the stockpile contained detectable levels of TPH-d. In a phone conversation on June 25, 1993, Mr. Scott Seery, Hazardous Materials Specialist for the Alameda County Environmental Health Services Agency, stated that although samples from the tank area contained low levels of diesel, no further excavation would be necessary. In another telephone conversation on July 21, 1993 with Juliet Shin, Hazardous Materials Specialist for the Alameda County Environmental Health Services Agency, no monitor wells or any further work is needed given that it is a residential site with a former heating oil tank.

KEY POINTS:

- Approximately 18 cubic yards of soil was excavated and hauled off site from 1200 San Antonio Avenue in Alameda Approximately 18 cubic yards of clean backfill was used to replace the excavated soil.
- Soil samples contained TPH-d levels above laboratory detectable levels.
- Groundwater was not encountered during the tank removal activities and it is unknown whether groundwater is impacted.
- No regulatory action has not been requested as of the date of this report.

RECOMMENDATIONS

Based on the laboratory results and the two telephone conversations mentioned above, no further work is necessary, therefore Artesian recommends site closure.

LIMITATIONS

The authors and firm offer no assurance and assume no responsibility for site conditions or activities which were beyond the scope of work requested by the client and referenced in the introduction of this report. The compensation agreed to by the client and the firm corresponds to the scope of work defined, with the associated limitations which are an integral and important part of this report. This report was prepared with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This investigation was conducted solely as a tool in assessing environmental conditions of the soil and/or groundwater with respect to relative hydrocarbon product contamination in the immediate vicinity of the former underground storage tank. No soil engineering or geotechnical recommendations are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. There may be variations in subsurface conditions away from the sample points available. There are no representations, warranties, or guarantees that the points selected for sampling are in anyway representative of the entire site. Data from this report reflects the sample conditions at specific locations at a specific point in time. No other interpretations, representations, warranties, guarantees, express or implied, are included or intended by this report. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. There are no guarantees or warranties, express or implied, that undocumented, nonpermitted, illegally or improperly abandoned subsurface containers (such as underground storage tanks or drums) or other sources of contamination or contaminated soil or groundwater itself, or covered, encapsulated, inaccessible or nonobservable hazardous materials either do or do not exist on the property.

This project involved hazardous or toxic compounds and there are certain inherent risk factors involved (such as limitations on laboratory or analytical methods or equipment, variations in subsurface conditions, and risks associated with specific analysis not requested by the client), which may adversely affect the results of the project, even though the services were performed with such skill and care as are generally accepted professional standards for the environmental geology profession.

This report and all matters contained herein were prepared for the sole and exclusive benefit of the client specified herein, and is intended only for the use of the client. Neither all, nor any part of the contents of this report, or copy thereof, shall be used for any purpose by anyone but the client specified herein nor shall it be conveyed or disseminated by anyone without the express written consent of the authors. No one, except for the client specified herein, may rely on this report for any purpose. Any person or entity who obtains or reads this report, or a copy thereof, other than the client specified herein, expressly assumes all risk of damages to himself or third persons arising out of reliance thereon or use thereof and waives the right to bring any action based on this report, directly or indirectly, and the authors shall have no liability to any such person or entity.

DISTRIBUTION

Artesian recommends that the client forward copies of this complete report to all appropriate regulatory agencies and representatives. Copies of this report have been sent to the client for this purpose. Preface all reports to regulatory agencies with a cover letter on letterhead and signed by an appropriate responsible individual.

Mr. Peter K. Templeton 1200 San Antonio Avenue Alameda, CA 94501

Mr. Richard Hiett Regional Water Quality Control Board San Francisco Bay Region 2101 Webster St., 5th Floor Oakland, CA 94612

Ms. Juliet Shin, Hazardous Materials Specialist Alameda County Environmental Health Services Agency Department of Environmental Health Hazardous Materials Division 80 Swan Way, Room 200 Oakland, CA 94621 **TABLE**

TABLE 1 - SUMMARY OF ANALYTICAL DATA

Sample	Date	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TPH-d (ppm)
BP-1 BP-2 BP-3	6/17/93 6/17/93 6/17/93	ND ND ND	ND ND ND	ND ND ND	ND ND ND	33 33 ND
SP-1	6/17/93	ND	ND	ND	ND	ND
DS CS	6/17/93 6/17/93	ND	ND	ND	ND	47 ND*

ppm = parts per million

ppb = parts per hillion

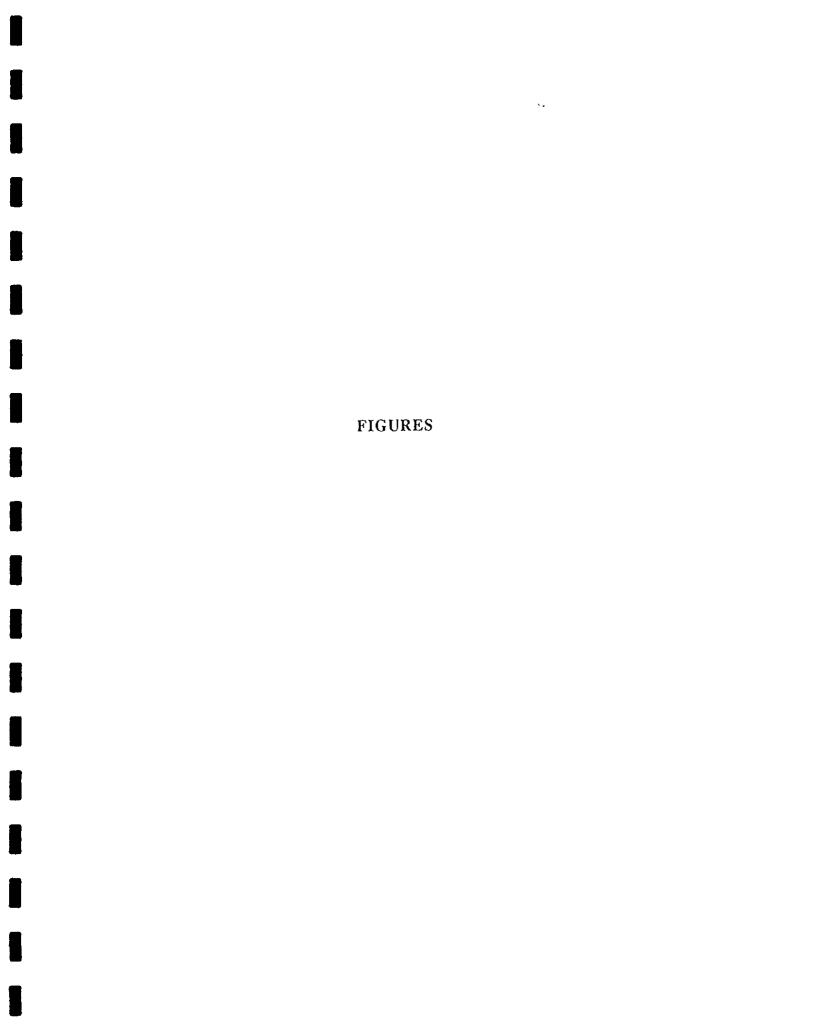
ppb = parts per billion

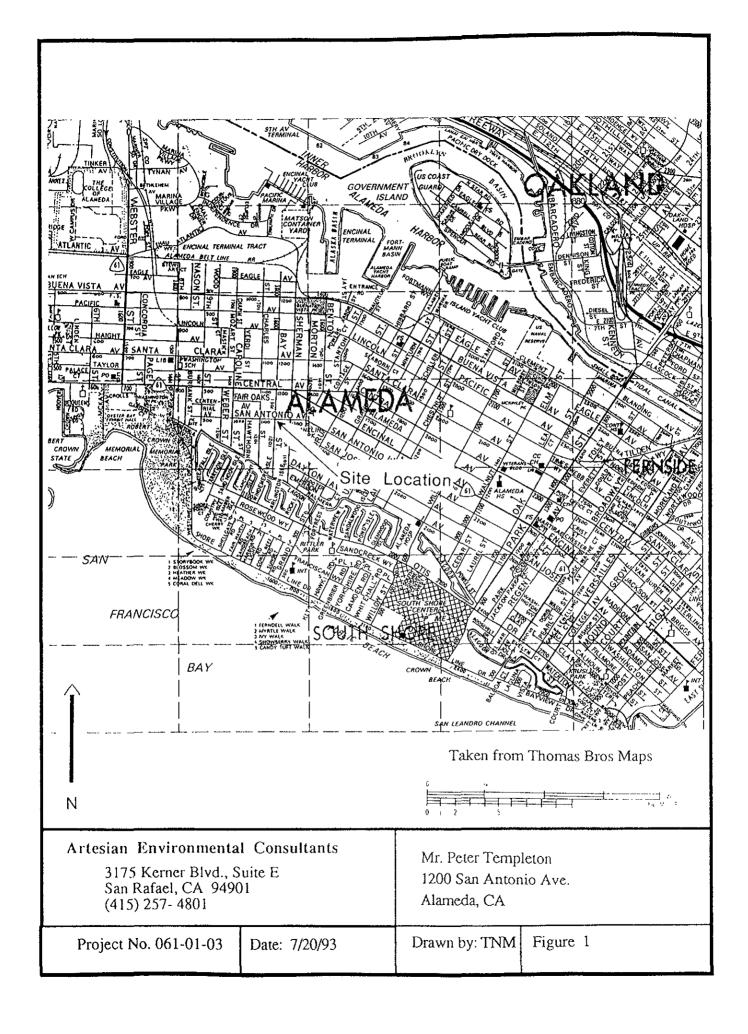
TPH-d = total petroleum hydrocarbons as diesel (EPA Method 3550/8015)

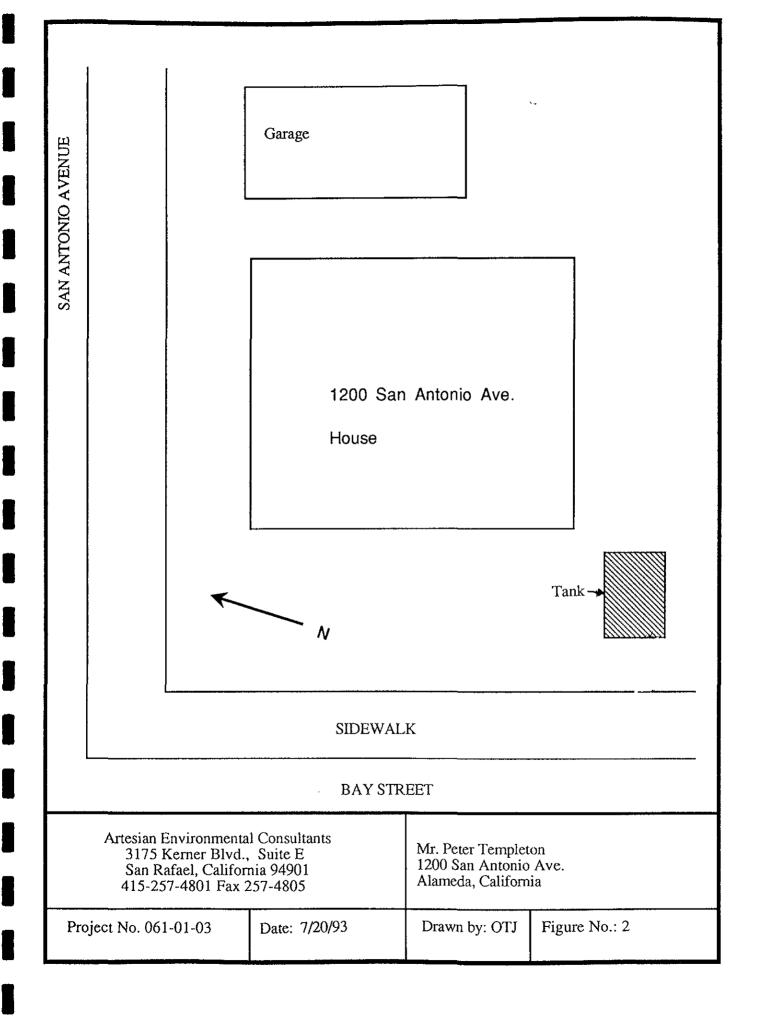
BTEX = benzene, toluene, ethylbenzene and total xylenes (EPA Method 8020)

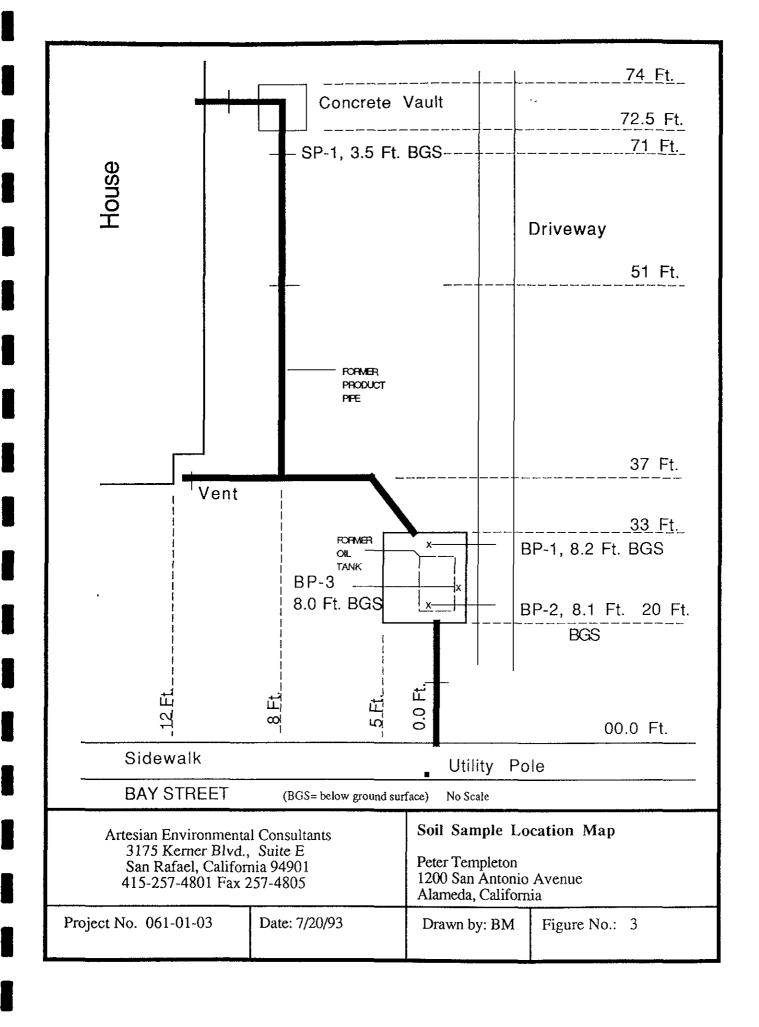
ND = at or below the detection level

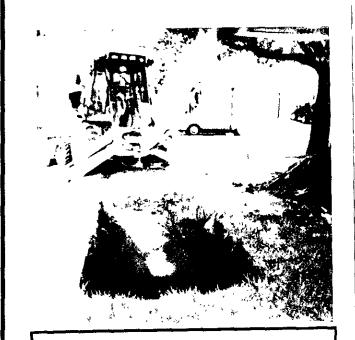
^{* =} Unknown hydrocarbon found in late motor oil range. If quantified as diesel: 16 ppm.



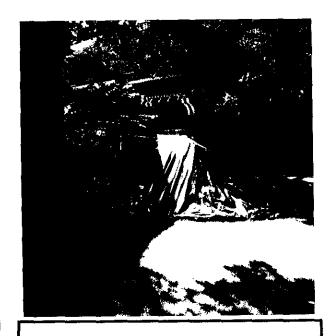








Excavating the Pit



Covered stockpile with fenced pit in background



Fenced pit



Sampling from the pit

ARTESIAN ENVIRONMENTAL CONSULTANTS

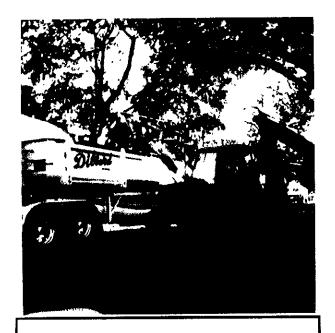
3175 Kerner Blvd., Suite E San Rafael, California 94901 415-257-4801 Fax 415-257-4805 Peter Templeton 1200 San Antonio Avenue Alameda, California

Project No.: 061-01-03

Date: 7/20/93

Drawn by: BM

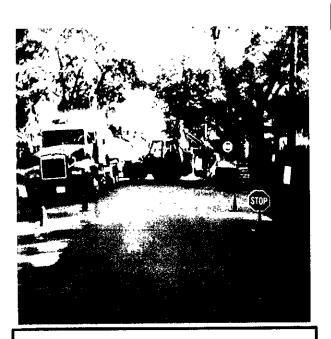
Photographs



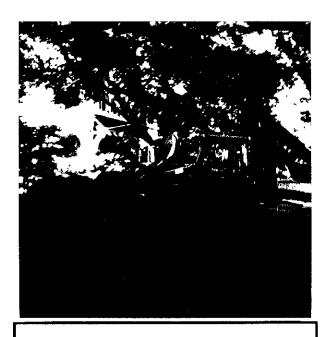
Loading excavated soil into truck



Unloading backfill into pit



Loading excavated soil into truck

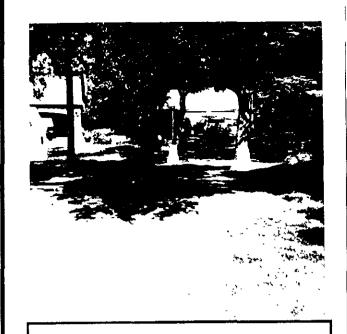


Removal of excavated soil

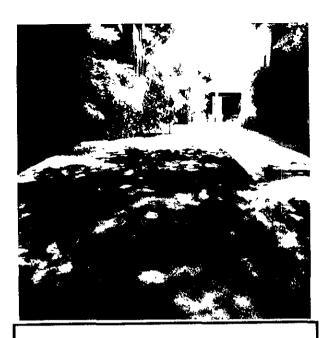
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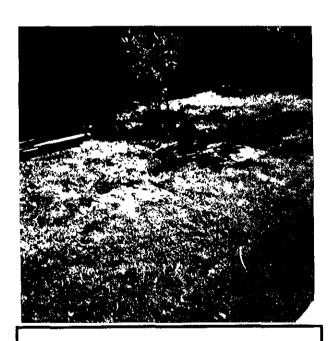
Project No.: 061-01-03 Date: 7/20/93 Drawn by: BM Photographs



Backfilled pit



Backfilled pit



Backfilled pit by concrete vault

ARTESIAN ENVIRONMENTAL CONSULTANTS

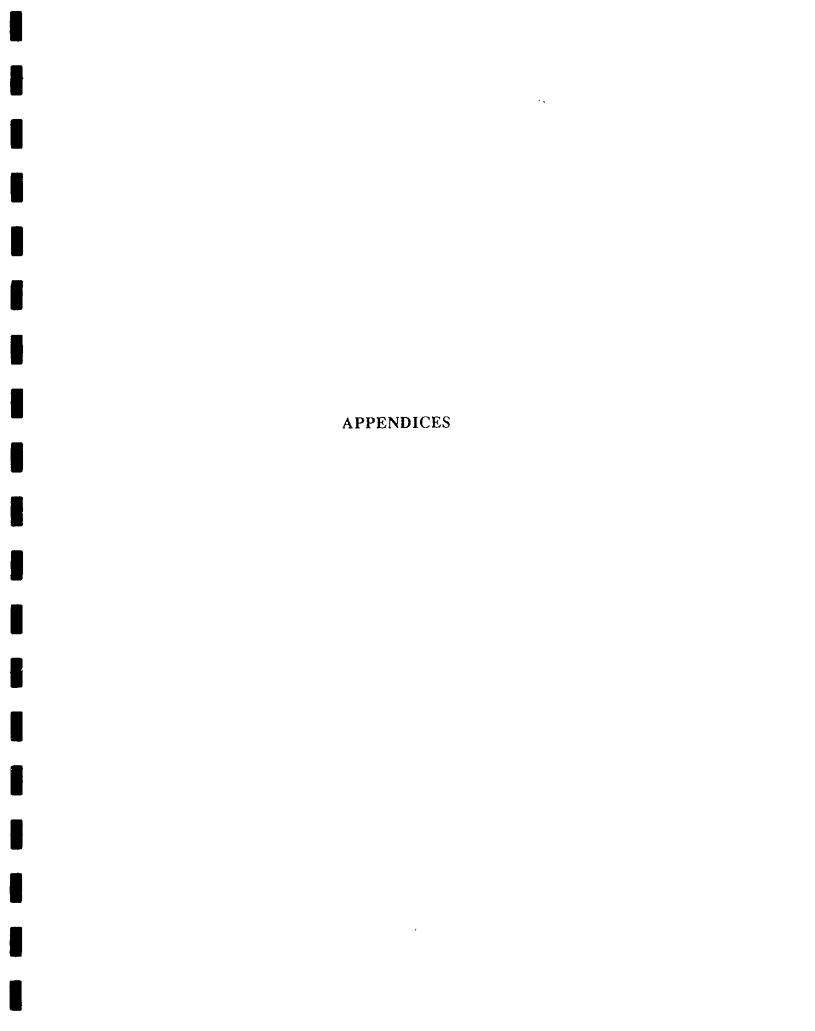
3175 Kerner Blvd., Suite E San Rafael, California 94901 415-257-4801 Fax 415-257-4805 Peter Templeton 1200 San Antonio Avenue Alameda, California

Project No.: 061-01-03

Date: 7/20/93

Drawn by: BM

Photographs



APPENDIX A

Artesian Environmental Consultants

Standard Operating Procedures

SOIL SAMPLING

- Hand Samples: Undisturbed soil samples are obtained using a slide hammer hand sampler with a single sampling cup at the end. The sampler holds one (1), clean, six inch long by two inch diameter brass tube. The sample is obtained by hammering the cup and tube into the undisturbed soil. The sampler is removed, opened, and the brass tube containing the sample is extracted.
- Electric Drive Samples: Undisturbed soil samples are obtained using a continuous coring, 0.75 inch, lined, steel sampler. The sampler is driven into the soil using an electric rotary hammer. The sampler holds one, four foot by one inch diameter, new, plastic, sampling liner. After driving the steel sampler three to four feet, the sampler is extracted and the sampling liner containing the sample is removed.
- Pneumatic Drive Samples: Undisturbed soil samples are obtained using a 1.0 inch, steel, outer drive casing, fitted with a 0.5 inch, inner soil sampler, fitted with a brass liner. The casing is pneumatically driven to the desired depth, an inner plug rod is removed and the sampler is inserted into the casing. The sample is obtained by hammering the sampling cup into the undisturbed soil. After driving the sampler six inches, it is extracted and the sampling liner containing the sample is removed.
- California Split-spoon Samples: Undisturbed soil samples are obtained using a California Split-spoon sampler fitted with three six inch long by two inch diameter brass tubes. The sampler is lowered down inside a hollow stem auger after the auger plug has been removed. The sampler is then driven at least eighteen inches. The sampler is usually driven using a 140 pound hammer dropping 30 inches at each blow. After driving the sampler, the sampler is extracted and the sampling liner containing the sample is removed.

Immediately after extraction the sample tube ends are sealed with Teflon tape, plastic cap plugs, and isolated in hermetically sealed locking plastic bags.

All samples are labeled and chilled to 0° C for transportation to a California State certified hazardous materials laboratory. Chain of Custody documentation accompanies all samples to the laboratory. A copy of the Chain of Custody documentation is attached to the Certificate of Analysis.

All soil samples are collected in accordance with California Regional Water Quality Control Board (RWQCB) procedures described in the Leaking Underground Fuel Tank (LUFT) Field Manual, the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites, and local regulatory guidelines.

Standard Environmental Protection Agency (EPA), San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), and Department of Health Services (DHS) methodologies for sampling and analyses are routinely utilized.

Chain of Custody documentation accompanies all samples to the laboratory. A copy of the Chain of Custody documentation is attached to the Certificate of Analysis.

Soil cuttings and excess sampling materials are properly stored and labeled on site in DOT 17-H containers pending off site disposal.

Artesian Environmental Consultants

Standard Operating Procedures

SOIL EXCAVATION AND SAMPLING

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Excavated soil is screened and segregated in the field using a vapor analyzing device such as a photo-ionization detector (PID) or organic vapor analyzer (OVA). Documentation of soil removal activities include field reports and photographs. After the removal of soil having obvious staining, odor or detectable levels of organic vapors as detected on a PID or OVA, confirmatory soil samples in the walls and floor of the excavation will be selected at least every 20 feet laterally. Additional samples will be selected on the recommendation of the geologist and regulator. All sampling will be performed with a backhoe.

Soil samples for chemical analysis are collected in pre-cleaned, thin-walled tubes, typically 6-inches long and 2-inches in the outside diameter. After removing the top 2-inches of soil, the sample tube is pushed or driven with a wooden mallet into the native soil near the teeth of the backhoe bucket. The brass tube is immediately capped on both ends with Teflon tape, trimmed and hermetically sealed with plastic end caps. The samples are then labeled and placed in individual see-through zip-lock plastic storage bags. The samples are stored in an ice chest with crushed ice to maintain a constant temperature of 4 ° Celsius. A thermometer is kept in the ice chest to ensure that the proper temperature is maintained. The samples are then delivered under chain-of-custody procedures to a state-certified hazardous materials testing laboratory. The above mentioned procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOCs) prior to chemical analysis.

APPENDIX B

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

June 23, 1993

ChromaLab File No.: 9306219

Submission #: 9306000219

ARTESIAN ENV. CONSULTANTS

Attn: Jim Jacobs

RE: Five soil samples for Diesel analysis

Project Name: TEMPLETON RESIDENCE

Project Number: 61-001-03
Date Sampled: June 17, 1993
Date Extracted: June 21, 1993

Date Submitted: June 17, 1993
Date Analyzed: June 22, 1993

RESULTS:

Sample I.D.	Diesel (mg/Kg)
BP-1	33
BP-2	33
BP-3	N.D.
SP-1	N.D.
DS	47
BLANK	N.D.
SPIKE RECOVERY	88%
DUP SPIKE RECOVERY	92%
DETECTION LIMIT	1.0
METHOD OF ANALYSIS	3550/8015

ChromaLab, Inc.

Alex Tam

Analytical Chemist

Eric Tam

Laboratory Director

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

June 24, 1993

ChromaLab File No.: 9306219 Submission #: 9306000219

Date Submitted: June 17, 1993

ARTESIAN ENV. CONSULTANTS

Attn: Jim Jacobs

RE: Five soil samples for BTEX analysis

Project Name: TEMPLETON RESIDENCE

Project Number: 61-001-03

Date Sampled: June 17, 1993

Date Analyzed: June 23, 1993

RESULTS:

			Ethyl	Total
Sample	Benzene	Toluene	Benzene	Xylenes
I.D.	(µg/Kg)	(µg/Kg)	(μg/Kg)	<u>(μg/Kg)</u>
			D	NT TO
BP-1	N.D.	N.D.	N.D.	N.D.
BP-2	N.D.	N.D.	N.D.	N.D.
BP-3	N.D.	N.D.	N.D.	N.D.
D-S	N.D.	N.D.	N.D.	N.D.
SP-1	N.D.	N.D.	N.D.	N.D.
or I	• • • • • • • • • • • • • • • • • • • •			
BLANK	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	92%	94%	102%	100%
DUP SPIKE RECOVERY	92%	93%	100%	98%
	5.0	5.0	5.0	5.0
		8020	8020	8020
METHOD OF ANALYSIS	8020	0020	0020	0020

ChromaLab, Inc.

Billy Thach

Analytical Chemist

Eric Tam

Laboratory Director

do

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

June 30, 1993

ChromaLab File No.: 9306364

Submission #: 9306000364

ARTESIAN ENVIRONMENTAL CONSULTANTS

Attn: Jim Jacobs

RE: One rush soil sample for Diesel analysis

Project Name: TEMPLETON RESIDENCE

Project Number: 61-001-03

Date Sampled: June 17, 1993 Date Submitted: June 30, 1993
Date Extracted: June 30, 1993
Date Analyzed: June 30, 1993

RESULTS:

Sample I.D.

Diesel (mg/Kg)

CS

N.D.*

*Unknown hydrocarbon found in late motor oil range. If quantified as diesel, concentration equals 16 mg/Kg.

BLANK BLANK SPIKE DETECTION LIMIT METHOD OF ANALYSIS N.D. 90% 1.0

3550/8015

ChromaLab, Inc.

Alex Tam

Analytical Chemist

Eric Tam

Laboratory Director

CH CLIENT: ARTESIA DUE: 06/24/93

REF: 12134

Artesian

ROTAL PERIOD IN STORE OF STORE SAMPLERS: (Signature) BENSAMIN MIRA PROJECT NAME: TEMPLETON RESIDENCE ROTAL OIL & GREATES DESCRIPTION: PARTER LAND ADDRESS: 1200 SAN ANTONIO BLVD ALAMENA CA **CROSS** REFERENCE HATER NUMBER DATE TIME STATION LOCATION REMARKS BP-1 5 45AM TANK PIT X 5 DAYS THT 13P-2 61743 8,50 TANK PIT 5 OHUS TAT 1.1793 945 SMAIL P. PE PIT 15 61743 10.00 DIELY STOCKPILE χ̈́ RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) 6-17-93 DATE 6.17-93 TIME / 33 TIME 133. RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) DATE 6/17/93 Torn Have TIME 17:02 1702 TIME RELINQUISHED BY: (Signature) RECEIVED/BY: (Signature) DATE DATE TIME TIME RELINQUISHED BY: (Signature) DATE RECEIVED FOR LABORATORY BY: (Signature) DATE

TIME

TIME

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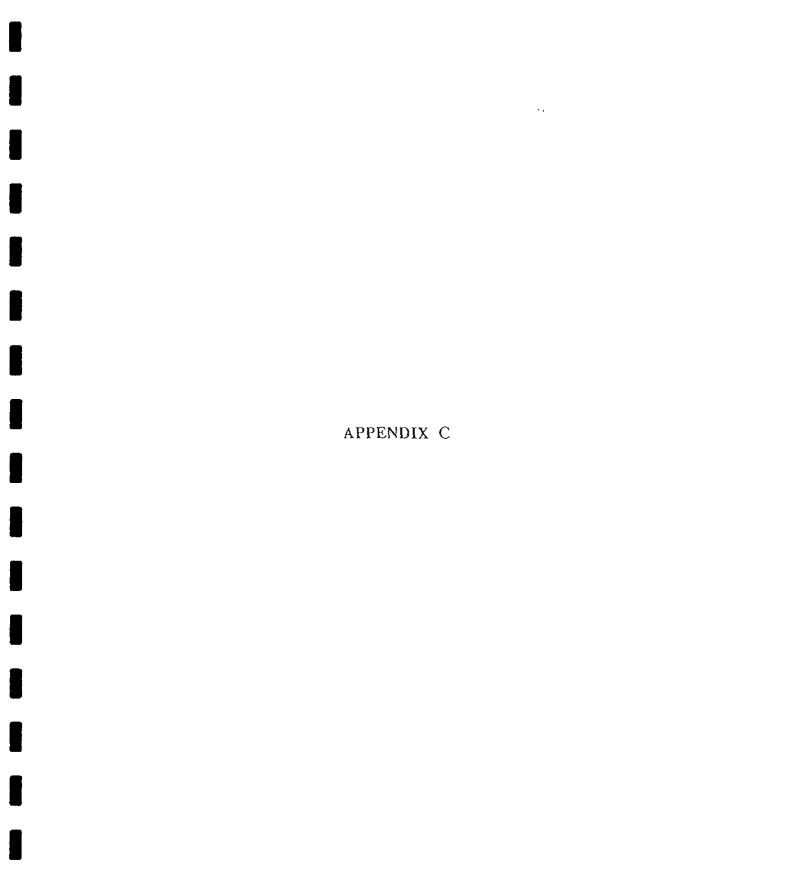
CHAIN OF CUSTODY

Artesian

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Order # 12295

SAMPLERS: (Signature) BENJAMIN MIRA JOB NUMBER: 6/-00/-03 PROJECT NAME: TEMPLETON RESULENCE ACTED OIL & CREATEST DESCRIPTION: ADDRESS: 1200 SAN ANGLO BLUD. ALAMENO CROSS ∡FERENCE| NUMBER REMARKS DATE TIME STATION LOCATION CS 6 17.93 CLEAN Stuck PiliE 10:05 MSHA #3 HRTAT X PLEMSE FAX RESULTS AS SCON AS AUSS, BLE FAX# 415) 257-4801 RELINQUISHED BY: (Signafure) RECEIVED BY: (Signature) DATE 6.50.93 4-30-3-TIME 9:35 Am TIME RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) DATE DATE TIME TIME RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) DATE DATE TIME RECEIVED FOR LABORATORY BY: (Signature) RELINQUISHED BY: (Signature) DATE TIME





NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENE	RATOR
Generator Name Peter Templeton	Generating Location Residence
Address1200 San Antonio Avenue	Address 1200 San Antonio Avenue
Alameda, CA 94501	Alameda, CA 94501
Phone No.	Phone No.
BFI Waste Code C A 4 0 5 0 6 2 8 9 3 Description of Waste	Quantity Units No. Type C - Carton
NON HAZARDOUS SOIL	C C O O S Y O T B - Bag T - Truck P - Pounds Y - Yards O - Other
I hereby certify that the above named material does not contain state law, is not a hazardous waste as defined by 40 CFR Par classified and packaged, and is in proper condition for transport	n free liquid as defined by 40 CFR Part 260.10 or any applicable to 261 or any applicable state law, has been properly described, tation according to applicable regulations.
Generator Authorized Agent Name Signature	Shipment Date
TRANSF	PORTER
- 88	Phone No. (516) 634-65-6
Truck No	Driver Name (Print)
Address P.O. Box 218	Vehicle License No./State 39/3083
Byron, CA 94514	Vehicle Certification
I hereby certify that the above named material was picked up at the generator site listed above.	I hereby certify that the above named material was delivered without incident to the destination listed below.
Driver Signature Shipment Date	Driver Signature Delivery Date
	NATION
Site Name BFI Landfill P.C. 502-16012	
Site Name 4001 . Vasco Road Livernore, Address	Phone No. [*] *] * [*
I hereby certify that the above named material has been accepted a	and to the best of my knowledge the foregoing is true and accurate.
Name of Authorized Agent Signature	Receipt Date
	:

PASS CODE _

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