

May 23, 1994

95 MAR -8 PM 1:05

Mr. Jim Minor
P.O. Box 726
Diablo, CA 94528



RE: Quarterly Groundwater Monitoring Performed at 4341 Howard Street, Oakland, CA

Dear Mr. Minor,

Artesian Environmental Consultants (Artesian), a general engineering and drilling contractor with hazardous waste removal certificate (#624461), is pleased to submit this letter report regarding the results of quarterly groundwater monitoring performed at 4341 Howard Street, Oakland, California- formerly El Monte RV Center (see Figure 1).

BACKGROUND

On November 15, 1991 a 1,000 gallon gasoline underground storage tank (UST) was removed from the 4341 Howard Street site by Zaccor Corp. of Menlo Park, California. Soil samples taken at the time of the tank removal indicated up to 8,200 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-g), 33 ppm benzene (B), 93 ppm toluene (T), 75 ppm ethylbenzene (E), and 330 ppm total xylenes (X).

After removal of the tank the excavation was backfilled with clean imported fill material. The dispenser was removed. Stockpiled soil was left on-site.

On June 7, 1993 Artesian was contracted to overexcavate the contaminated soil, remove the existing and generated stockpiled soil, and install a groundwater monitoring well.

On June 24, 1994 Artesian personnel overexcavated the gasoline impacted soil removing 110 yards of impacted soil forming an excavation pit approximately 15' X 20' X 10' deep. Approximately 110 yards of hydrocarbon impacted soil was excavated and stockpiled on-site.

Soil samples were taken from each of the four sidewalls of the excavation at 8 feet below ground surface. The analytical results of this sampling event indicated up to 410 ppm TPH-g and up to 7.2 ppm benzene, and 18 ppm toluene.

On August 19, 1993 the excavation was backfilled with clean imported backfill material purchased from Rock Transport of Oakland, California.

On August 31, 1993 Artesian personnel supervised the removal of the stockpiled soil. The stockpiled soil was transported to Gibson Environmental of Bakersfield, California by Caballero Trucking of San Jose, California for recycling.

On June 25, 1993 Artesian personnel supervised Guess Drilling of San Rafael, California in the installation of a groundwater monitoring well (MW-1).

Groundwater monitoring well MW-1 was placed approximately 10 feet from the edge of the excavation in the groundwater downgradient direction. The westerly groundwater gradient flow direction was based on wells at the neighboring Bank of America site located at 500 High Street, adjacent to the subject site.

Groundwater monitoring well MW-1 was constructed with two inch diameter Schedule 40, factory threaded and slotted polyvinyl chloride casing. A slot size of 0.020 inches was selected based on the knowledge that the predominant soil type at this site is a sandy silt. The slotted interval extends from 5 feet above first groundwater to 10 feet below first groundwater, to a total depth of 20 feet. Groundwater was encountered at 10 feet below ground surface. The annular space around the 0.020 inch slotted sections of casing was packed with lonestar #3 sand (LS#3 = 1.5 mm) as filter material, from the bottom of the borehole to approximately 3 feet below ground surface.

Two soil samples were taken at the time of drilling at five and ten feet below ground surface. Both samples indicated not detected at or above the detection limit (ND) levels for TPH-g and BTEX. A groundwater grab sample taken at the time of drilling also indicated ND levels for TPH-g and BTEX.

FIELDWORK

Groundwater Monitoring Well Purging

On April 27, 1994, the well MW-1 was purged using a downhole pump fitted with disposable PVC tubing. A minimum of three borehole volumes were extracted from the well to ensure that a representative sample of aquifer groundwater would be obtained. All pumps and equipment were cleaned with non-phosphate laboratory grade detergent and rinsed with deionized water to prevent cross contamination.

Following the recharge of the well to at least 80% of the well's original volume, the parameters of temperature, electrical conductivity, and pH were measured. Additional measurements of these three parameters were made to confirm well stabilization (stabilization is defined as two or more subsequent measurements whose values are within 10% of each other).

The discharge effluent was drummed in a DOT approved 17-H drum, and labeled for disposal in a manner consistent with the Regional Water Quality Control Board and other regulatory agency regulations and guidelines.

Prior to purging, depth to groundwater measurements were taken in the well. For the April 27, 1994, sampling event, groundwater was measured at 5.90 feet below top of casing.

Well Sampling

Groundwater sampling was performed on April 27, 1994, following the purging of the well. Groundwater samples were obtained following the SOP for groundwater sampling included in the Appendix.

Groundwater samples were collected with a new disposable bailer using nylon line. After the well was sampled the bailer and line was disposed of. Groundwater samples were collected in labeled 40 ml VOAs with no headspace. The samples were placed on crushed ice and transported under chain of custody documentation to Chromalab, Inc. of San Ramon, California, a California State certified hazardous materials laboratory which specializes in the analysis of hydrocarbon contaminated samples.

The groundwater samples were analyzed for TPH-g by EPA method 5030 and modified 8015, and BTEX by EPA method 602. Results of these analyses indicated 340 ppb TPH-g and 2.1 ppb benzene. Toluene, ethylbenzene, and total xylenes were all ND. See Table 1 for a summary of sample results (see attached water sample laboratory reports).

A summary of groundwater sampling results for this and prior sampling events is presented in Table 1.

REPORTAGE

A copy of this report, along with a cover letter, should be sent to the addresses listed below.

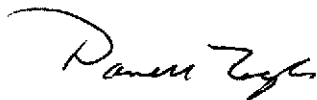
Attn: Barney Chan
Alameda County Health Agency
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 350
Oakland, California 94621

Attn: Richard Hiatt
Regional Water Quality Control Board
2101 Webster Street
Suite 500
Oakland, California 94612


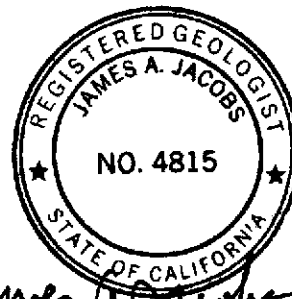
LIMITATIONS

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. 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. 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. 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.

Sincerely,



Darrell Taylor
Project Geologist



James A Jacobs, R.G. #4815
Principal Geologist

TABLE 1. QMR ANALYTICAL RESULTS

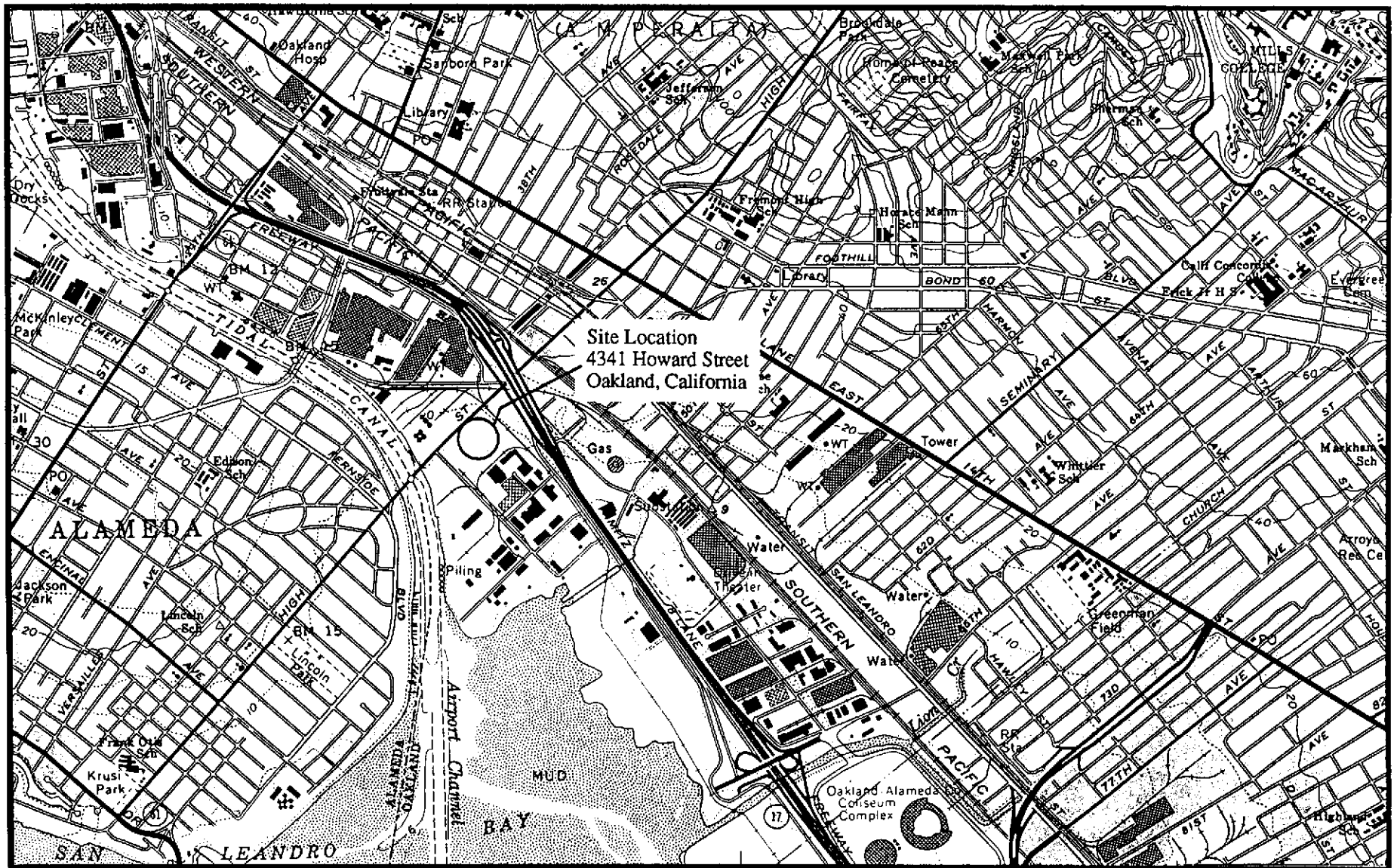
Sample ID	Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1(grab)	6/25/93	<1	<0.0005	<0.0005	<0.0005	<0.0005
MW-1	7/27/93	0.25	0.0017	<0.0005	<0.0005	<0.0005
MW-1	4/27/94	0.34	0.0021	<0.0005	<0.0005	<0.0005

All Values Given In Parts Per Million

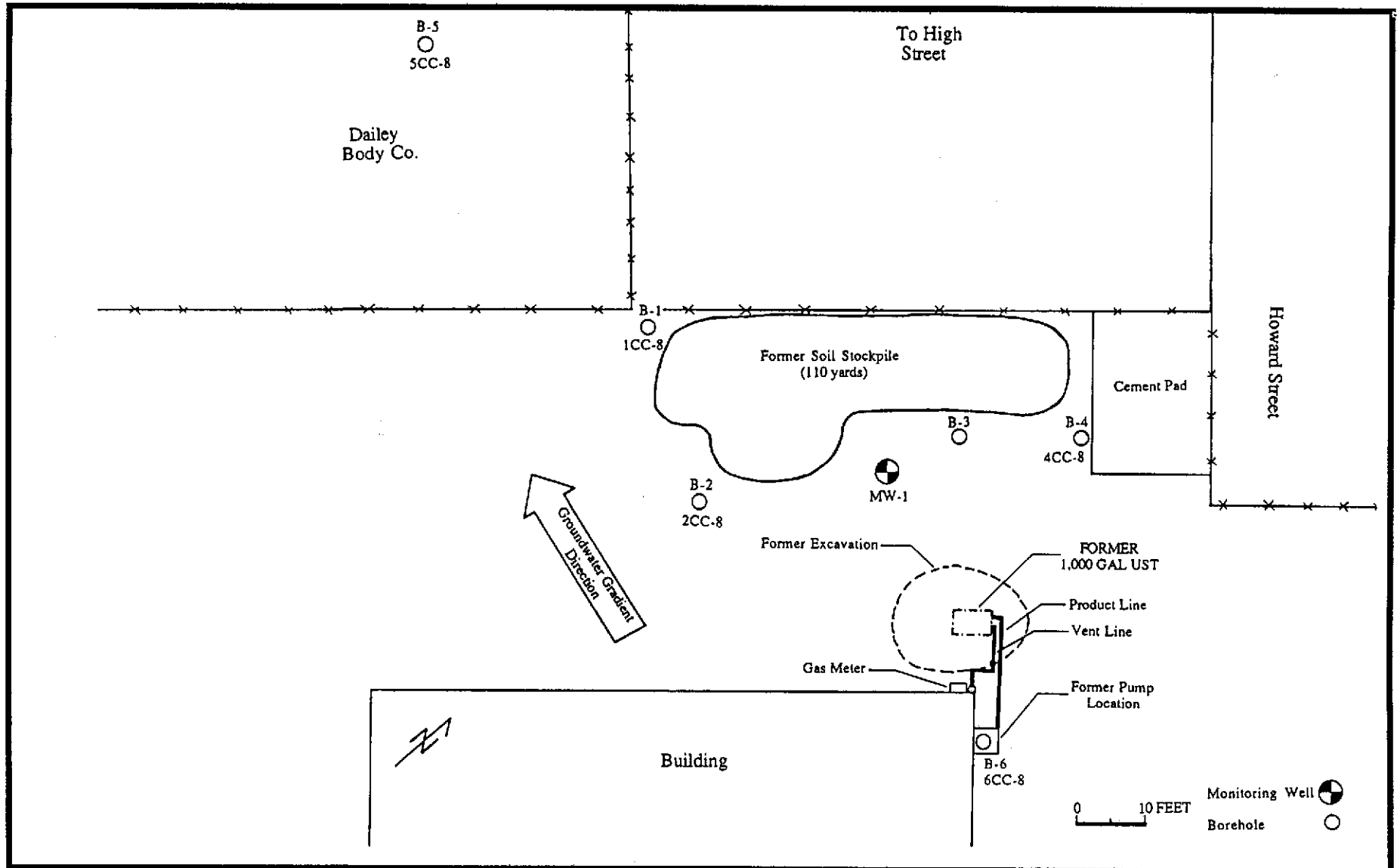
TPH-g = Total Petroleum Hydrocarbons as Gasoline

MW-1(grab) = Water Grab Sample Collected During Well Installation

MW-1 = Groundwater Monitoring Well Water Sample



<p>SCALE 1:24 000 MILE</p> <p>0 160' 320' 480' 640' 800' 960' 1120' 1280' 1440' 1600'</p> <p>0 1/4 1/2 3/4 1 MILE</p>	<p>Site Map</p> <p>Jim Minor Site 4341 Howard Street Oakland, California</p>	<p>OAKLAND EAST, CALIF. SW/4 CONCORD 15' QUADRANGLE N3745—W12207.5/7.5</p> <p>1959 PHOTOREVISED 1980 DMA 1559 I SW-SERIES V895</p>	
Project No. 100-001-01	Date: 9/8/93	Drawn by: DT	Figure 1



Site Map

4341 Howard Street
Oakland, California

Project No. 100-001-01

Date: 9/2/93

Drawn by: DT

Figure 2

CHROMALAB, INC.

Environmental Services (SDB)

May 4, 1994

ChromaLab File#: 9404339

ARTESIAN ENV. CONSULTANTS

Atten: Darrell Taylor

Project: MINOR

Project#: 100-002-01

Received: April 28, 1994

re: 1 sample for Gasoline and BTEX analysis.

Matrix: WATER

Sampled on: April 27, 1994

Analyzed on: May 2, 1994

Method: EPA 5030/8015/602


Run#: 2784


Lab #	SAMPLE ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
50283	MW-1	340	2.1	N.D.	N.D.	N.D.

Note: 196ppb of total Gasoline conc. from two peaks

DETECTION LIMITS	50	0.5	0.5	0.5	0.5
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK SPIKE RECOVERY (%)	92	107	116	109	115

ChromaLab, Inc.


Jack Kelly
Chemist


Eric Tam
Laboratory Director

WATER SAMPLING DATA FORM

ARTESIAN ENVIRONMENTAL CONSULTANTS

Project Name Blymyer	Project No. 116-001-01	Well Name MW 1	Date 1/27/94	Time 10:15	Name Jan	Page of
--------------------------------	----------------------------------	--------------------------	------------------------	----------------------	--------------------	---------

Well Depth (ft.) 19.62	Sounded Depth (ft.) 13.72	Well Type <input checked="" type="checkbox"/> Monitor Well <input type="checkbox"/> Sampling Port <input type="checkbox"/> Other (describe)
DTW (ft.) 5.90	Date/Time	
Well Diam. (in.) 2	LHIC Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	LHC Thickness _____

	Time	pH Probe No.	Temp Probe No.	Cond Probe No.
1	10:18	7.50	63.7	15.30 umhos
2	10:21	7.48	63.4	16.04
3	10:24	7.52	63.9	16.36
	10:27	7.52	63.9	16.42
	10:30	7.57	63.8	16.42

Initial Height of Water in Casing (ft.) 13.72	Formulas and Conversions $r = \text{well radius in ft.}$ $h = \text{ht. of water column in ft.}$ $\text{vol. of column} = r^2 h$ 7.48 gal / ft^3	Sampling Equipment	
Volume (gal) 2.33		<input type="checkbox"/> Dedicated System <input type="checkbox"/> Bladder Pump <input type="checkbox"/> Bailor <input type="checkbox"/> PVC Bailor <input type="checkbox"/> 1/2 in. <input type="checkbox"/> 1 1/4 in. <input type="checkbox"/> 3 in.	
Volume to be Evacuated <input type="checkbox"/> x3 <input type="checkbox"/> x4 7.0		Sampling Port No. Volume (gal) 15 Rate (gpm) _____	

Point of Collection <input type="checkbox"/> PE Hole <input type="checkbox"/> End of Bailor <input type="checkbox"/> Other: _____	Time Samples Taken Date
Sample Color	Depth to Water (ft.) Refrigerated? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sediment / Foreign Matter	Odor
Sampling Sequence	

	Evacuated		Evacuated	
	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	_____	_____	_____	_____
Start Time	_____	_____	_____	_____
Minutes	_____	_____	_____	_____
Amt Evacuated	_____ gal	_____ gal	_____ gal	_____ gal
Total Evacuated	15 gal			
Total Minutes	_____ min			
Evacuation Rate	_____ gpm			

Sample ID No.	Volume (ml/L)	Time	Preservative	Analysis	Lab

Pumped Dry? <input type="checkbox"/> Yes <input type="checkbox"/> No	A flow (gal)	Recovery	
Depth to Water During Pumping (ft.)	Time	Time	DTW
Depth to Water for 80% Recovery	Recovery Rate (gpm)	1 _____	_____
Sampled After: <input type="checkbox"/> 80% Rec. <input type="checkbox"/> 2 hours	% Recovery at Time of Sampling	2 _____	_____
		3 _____	_____
		4 _____	_____
		5 _____	_____

Container Codes: P = Plastic Bottle B = Brown Glass ml = milliliter L = liter
 V = VOA C = Clear Glass Other: Describe

Notes:

Artesian Environmental Consultants

Standard Operating Procedures

MONITORING WELL SAMPLING

Prior to groundwater sampling, initial water level and floating liquid hydrocarbon measurements are recorded for each well. Each well is sounded for depth to ascertain if silting has occurred and to verify the actual depth below ground surface. These measurements are used to calculate the volume for each well. At this time, all non-dedicated pumping and sampling supplies are washed with an Alconox solution, rinsed with clean water, and final rinsed with either distilled or deionized water to prevent any cross contamination from other sampling events.

Each well is purged by evacuating a minimum of three well-casing volumes of groundwater from the well. The well water may be evacuated either by bailing, or pumping. Any of the following may be used for bailing: a dedicated pvc bailer, sterile disposable polyethylene bailer, or a stainless steel bailer. For pumping the groundwater out of the well, a downhole impeller type pump (dedicated or removable with PVC tubing), a downhole dedicated bladder pump, or a surface peristaltic pump is used.

After three to four well volumes are pumped, each well is permitted to recharge to at least 80% of original capacity or for two hours; whichever occurs first. The water is then measured to verify whether the well has stabilized. Stabilization is determined by measuring the parameters of pH; temperature; and electrical conductivity. Stabilized measurements indicate that formation water has entered the well. When two subsequent measurements of these three parameters are within 10% of each other, the well is considered stabilized and is ready to be sampled.

The samples are collected using a new polyethylene bailer with a bottom siphon and nylon cord. The bailers are disposable, and therefore, never reused. The groundwater sample is visually inspected for the presence of free product in the sampling bailer. Agitation is minimized during sample retrieval to prevent aeration during the transfer from the well to the laboratory prepared sample containers. Duplicate water samples are collected from the well and siphoned into three, 40 ml, VOA, septum top vials, with additional 950 ml samples collected in an amber glass bottles or polyethylene bottles depending on the analyses to be performed. The VOA vials are filled completely, leaving no headspace, and are sealed with Teflon-lined lids. All samples are labeled, chilled to 4° C in an ice chest, and sent to a California State Certified hazardous materials testing laboratory under chain-of-custody documentation .

All groundwater 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.

Monitor well purge water is properly stored and labeled on site in DOT 17-H containers pending off site disposal.