GROUNDWATER WELL INSTALLATION, DEVELOPMENT AND SAMPLING

RON GOODE TOYOTA
1825 PARK AVENUNE
ALAMEDA, CALIFORNIA

PROJECT #003-190-01

PREPARED BY ENVIRONMENTAL BIO-SYSTEMS, INC.
FOR
ZACCOR CORPORATION

Timothy M. Babcock
Environmental Scientist

Reviewed by:

James A. Jacobs
R.G. #4815

REGISTERED GEOLOGIST
JAMES A. JACOBS
NO. 4815
STATE OF CALIFORN'A

December 2, 1991

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1.0) INTRODUCTION

This document contains information regarding the soil and groundwater exploration conducted at the Ron Goode Toyota facility located at 1825 Park Street in Alameda, California (the site) performed by Zaccor Corporation (the client) and supported by Environmental Bio-Systems, Inc. (EBS), on February 15 and 16, 1991. It describes activities conducted during the installation, development, and sampling of 3 groundwater monitoring wells. Subsequent reports will discuss the progress of groundwater monitoring and additional work as required.

The site is owned by the Estate of Bertha S. Keizer in care of William Burr III and was occupied by Ron Goode Toyota at the time of this report. The relevant site contacts are:

Principal Client Contact - Mr. Gary Zaccor, Zaccor Corporation, 791 Hamilton Avenue, Menlo Park, CA, 94025, (415) 363-2181

Consultant - Environmental Bio-Systems, Inc., 30028 Industrial Parkway Southwest, Suite C, Hayward, CA, 94544, (415) 429-9988. Project Manager - Timothy M. Babcock

2.0) PURPOSE AND SCOPE OF WORK

This report has been requested by the client to describe work performed in the installation of 3 groundwater monitoring wells at the site. The purpose of this work was to explore the extent of hydrocarbon impacted soil and groundwater underlying the subject property. The work was performed in response to detected concentrations of hydrocarbons encountered in soil

samples collected in the vicinity of underground storage tanks (UST's) formerly located at the site.

The reported work included the following tasks:

1. Observation of the drilling of 3 soil borings to depths approximately 10-feet below the groundwater table.

2. Collection of soil samples from 5-foot intervals from ground surface to the total depths of the borings.

3. Lithological classification of subsurface conditions as encountered in the borings.

4. Submission of selected samples from each boring to a client designated laboratory, certified by the State of California to perform the necessary analyses.

5. Observation of the construction of 3, 2-inch-diameter groundwater wells installed in the 3 borings.

6. Development of the wells.

7. Purging of the wells and collection of 1 groundwater sample from each well to be analyzed for total petroleum hydrocarbons as gasoline (TPHg), the hydrocarbon constituents benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons as diesel (TPHd), and total oil and grease (TOG).

8. Interpretation of field and laboratory data and preparation of a report summarizing this work.

3.0) SITE DESCRIPTION

The site is located at 1825 Park Street in the City and County of Alameda. A Site Location Map and a Site Diagram have been included in this report as Figures 1 and 2. The site is currently occupied by Ron Goode Toyota, an automobile dealership. A single building, housing both vehicle display and repair areas, is present on the site. The remainder of the property is asphalt-paved and is predominantly used for vehicle parking.

A 300-gallon UST, located just inside the southeastern side the building, was reportedly used to contain used motor oil prior to extraction. A 500-gallon UST, previously located just outside the building, was reportedly used to contain gasoline. The topography of the site is relatively level.

4.0) PREVIOUS ENVIRONMENTAL WORK

On December 27, 1991, Zaccor Corporation excavated and removed 1, 300-gallon UST and 1, 550 gallon UST from the site. The reported contents of the UST's, as previously noted, were used motor oil and gasoline, respectively. Sampling of soil, performed by EBS on behalf of Zaccor Corporation, at the time of removal indicated the presence of hydrocarbons in soil samples from beneath the UST's.

On March 21 and April 11, 1991, Zaccor Corporation, supported by EBS, performed an exploration of hydrocarbon impact to soil beneath the site. The scope of exploration consisted of the collection, field observation, and selected analysis of shallow soil samples.

5.0) HYDROGEOLOGIC SETTING

The site lies in the Alameda Bay Plain Groundwater Basin at an approximate elevation of 10-feet above mean sea level. The ground surface slopes gently to the northeast toward the Alameda-Oakland tidal canal, located approximately 200-feet northeast of the site. The shallow groundwater appears to be contained in artificial fill and the underlying Recent and upper Pleistocene tidal flat deposits.

6.0) SOIL BORINGS

On November 8, 1991, three soil borings numbered B1 through B3, were drilled at the site. Drilling was performed on behalf of Zaccor Corporation, by S&G Drilling, of Menlo Park, California. EBS recorded soil lithology, prepared sample containers, and transported the samples to ChromaLab, Inc., a client designated laboratory certified by the state to perform the necessary analyses.

Boring B1 was located in a position to the south of the previous UST locations. Borings B2 and B3 were placed in Clement Avenue at the North side of the building.

The soil borings were advanced using a Failing F-2 truck-mounted hollow-stem auger drill rig. To reduce the chances of cross contamination among boreholes, the augers were steam-cleaned prior to advancing each borehole. Drill cuttings were stockpiled on-site for future disposal at the discretion of the client. The cuttings were placed on visqueen sheeting and covered.

Water generated during the steam cleaning of augers and other decontamination procedures was contained in Department of Transportation (DOT) certified 17-H 55-gallon drums for storage and subsequent disposal at the discretion of the client.

6.1) Collection of Soil Samples

During drilling, discrete soil samples were collected at approximate intervals of 5-feet. Soil samples were collected using an 18-inch California-modified split-barrel sampler. The split-barrel sampler was driven 18-inches into undisturbed soil within the boring using a down-hole drop-hammer. Samples were removed from the sampler as soon as it was opened, and the ends of the brass liners containing soil designated for laboratory analysis were wrapped with aluminum foil and sealed with plastic caps. Duct tape was wrapped around the cap at its join with the liner to reduce the loss of volatile constituents. Soil samples selected for analysis were labelled, stored on ice, maintained, transferred, and delivered to a certified analytical laboratory in keeping with chain of custody procedures.

The sampler was washed with phosphate free detergent and triple-rinsed with distilled or deionized water between the collection of samples. Steam cleaning of the sampler was also performed between the drilling borings along with augers to prevent cross-contamination.

6.2) Boring Lithology & Observations

The soil borings were lithologically logged by EBS personnel under the direction and supervision of a state-registered geologist using the Unified Soil Classification System (USCS). For a more detailed description of soil lithology, see Appendix A, Logs of Soil Borings.

Boring B1 was drilled to a depth of 15-feet. Groundwater was initially encountered at 7-feet in a waterbearing zone consisting of fine grained sand with some clay. The boring was drilled 8-feet below the depth at which groundwater was first encountered, where the soil was noted to be a fine grained, wet sand.

Boring B2 was drilled to a depth of 15-feet. Groundwater was initially encountered at 8-feet in a waterbearing zone consisting of fine grained sand with minor clay. The boring was drilled 7-feet below the depth at which groundwater was first encountered. At the maximum depth encountered (7-feet), the soil remained a fine grained, wet sand.

Boring B3 was drilled to a depth of 15-feet. Groundwater was initially encountered at 10 feet in a waterbearing zone consisting of fine grained sand with up to 40% to 50% clay. The boring was drilled 5-feet below the depth at which groundwater was first encountered, and the soil remained a fine grained, wet, clay-rich sand. There was noticeable hydrocarbon product odor associated with the soil samples retrieved from this boring beginning at a depth of approximately 2-feet below ground surface, continuing to the depth of first encountered water. The water level appeared to stabilize at a depth of 6.35-feet in B3.

7.0) GROUNDWATER MONITORING WELLS

7.1) Construction Of Wells

Soil borings B1, B2, and B3 were converted to 2-inch diameter groundwater monitoring wells numbered MW-1, MW-2, and MW-3, respectively. Individual wells were constructed of polyvinyl chloride (PVC) casing with threaded joints, a threaded bottom-end plug, and a gasketed locking cap. The screened portion of the wells was extended from

about 3-feet to 5-feet above the upper saturation zone to the full depth of the boring. The screened portion of the well was perforated by the factory with 0.020-inch-wide slots. Unperforated pipe was used to complete the upper portion of the well. Filter sand (Number 3 grain size) was used to pack the annular space around the well. The sand was extended to approximately two feet above the perforated pipe, and a one-foot-long seal of bentonite clay pellets was placed above the sand. The upper annulus was sealed with cement or cement-bentonite grout to within a few inches of the ground surface.

A well cover was placed over each well head and secured in place with concrete. Well caps, equipped with watertight seals and protective locks to stop infiltration of surface water and help prevent other disturbances, were used to seal each well. Well construction data is shown in Appendix A Logs of Soil Borings.

7.2) Development of Wells

On November 13, 1991, well MW-1 was developed. Wells MW-2 and MW-3 were developed on November 14, 1991. A submersible pump with disposal plastic tubing was used to purge water from within the wells. The pumps were decontaminated between each well using a non-phosphate detergent wash with a deionized water rinse.

Approximately 4-well volumes were purged from within each well during development. During development, measurements of pH, temperature, and conductivity were taken from successive field samples of the water being purged. Purging was halted when these parameters were noted to have stabilized. All purged water was contained on-site in DOT certified 17-H 55-gallon drums pending analytical results and subsequent disposal at the discretion of the client.

7.3) Collection of Groundwater Samples

On November 18, 1991, MW-1, MW-2, and MW-3 were sampled. Depth to water measurements were taken prior to evacuating water from the wells. Prior to the purging of water from within the wells, a bailer was used to extract a sample from each well to evaluate the presence or absence of a sheen or hydrocarbon odor. The presence of a hydrocarbon sheen or odor was not noted in water observed from any of the wells.

Prior to the collection of a samples, a volume of water in excess of four well casing volumes was evacuated from each well using a submersible pump with disposable tubing. During evacuation, well parameter readings (pH, conductivity, and temperature) were measured and recorded to evaluate stabilization prior to sampling. Water sampling field logs are presented in Appendix B.

To prevent cross contamination, the water samples were collected from each of the wells using a disposable bailer. The submersible pump used purge water from the wells was decontaminated between wells using a phosphate-free detergent, tap-water rinse, and triple rinsing with distilled or deionized water. The tubing used with the submersible pump was disposed of between wells so that a new, previously unused section of tubing was used at each well.

The water from each well was transferred from the bailer into clean, 1-liter amber glass jars, and 40-milliliter (ml) volatile organic analysis vials (VOA's) containing hydrochloric acid as a preservative. Samples collected from the wells were designated with the same name as their respective wells.

8.0) SAMPLE SELECTION AND ANALYSIS

8.1) Selection of Soil Samples For Analysis

Due to the shallow depth of groundwater at the site, approximately 6 to 8-feet, only one soil sample from each of the borings was selected for laboratory analysis. The soil sample collected from the unsaturated zone in closest proximity to groundwater was selected for analysis. From Boring B1 the selected sample (B1 5-5.5') was collected from between the depths of 5.0 and 5.5-feet. The sample retained from boring B2 (B2 5-5.5') was collected from between the depths of 5.0 and 5.5-feet. The soil sample chosen from boring B3 (B3 5-5.5') was also collected from between the depths of 5.0 and 5.5-feet.

8.2) Soil Sample Analyses and Results

The selected soil samples were analyzed at ChromaLab, Inc. for TPHg and BTEX, using EPA methods 5030 and a modified 8015/602, TPHd using a modified EPA method 3510/8015, and TOG using EPA method 5520 BF. The soil sample chain of custody forms and certified analytical reports documenting the results of sample analyses are presented in Appendix C. The results of soil sample analyses are shown in Table 1.

8.3) Water Sample Analyses and Results

The three water samples collected from the wells by the methods described above were submitted to ChromaLab, Inc. for analysis. Each sample was analyzed for TPHg and BTEX, using EPA methods 5030 and a modified 8015/602, TPHd using a modified EPA method 3510/8015, and TOG using EPA method 5520 BF. The water sample chain of custody form and certified analytical report documenting the results of water sample analyses

are presented in Appendix D. The results of sample analysis are shown in Table 2.

9.0) CONCLUSIONS

9.1) Soil Borings

The subsurface of the site, as described by the soil boring logs for borings B1, B2, and B3, was predominantly composed of fine grained sands with varying percentages of clay.

A noticeable hydrocarbon odor was recorded in the field observations of soil from boring B3. The odor was first noted at a depth of approximately 2-feet, extending to the depth at which water was encountered (approximately 6-feet).

Laboratory analysis of the soil samples collected from borings B1 and B2 did not show detectable levels of TPHg, BTEX, TPHd, or TOG. Analysis of the soil sample collected from boring B3 (B3, 5-5.5') showed 250 ppm of TPHg, 17 ppm of TOG, and detectable levels of BTEX.

9.2) Groundwater

The level at which water stabilized within the wells was approximately 4 to 6-feet below ground surface. Detectable concentrations of TOG were found in water samples analyzed from wells MW-1, MW-2, and MW-3.

10.0) REPORTAGE

We recommend that Zaccor Corporation advise the property owner to forward copies of this report to the regulatory agencies and representatives listed below. Copies of this report have been included for this purpose. Each copy must be accompanied by a letter attesting to the validity of this report to the best of the property owner's knowledge. This letter must be prepared on the property owner's letterhead and signed.

Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street
Room 700
Oakland, CA 94612
Attention: Mr. Rich Hiett

Alameda County Health Agency
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621
ATTN: Ms. Katherine Chesick

11.0) LIMITATIONS

The recommendations in this report were developed in accordance with generally accepted standards of current environmental practice in Northern California. These recommendations are time-dependant and should not be considered valid after one year from the date of issue of this report. After the one year period, site conditions and these recommendations should be reviewed.

This study was done solely for the purpose of evaluating environmental conditions of the soil and groundwater related to hydrocarbon product contamination at the subject site. No soil engineering or geotechnical references are implied or should be inferred.

Evaluation of the conditions of the site, for the purposes of this study, was made from a limited number of observation points. Subsurface conditions may deviate away from these points. Additional work, including further study of the subsurface, can reduce the inherent uncertainties associated with this type of study.

This study was performed and the report was prepared for the sole use of our client, Zaccor Corporation. It is the responsibility of the Client to convey these recommendations to regulatory agencies and other parties, as appropriate.

The recommendations herein are professional opinions that our firm has endeavored to provide with competence and reasonable care. We are not able to eliminate the risks associated with environmental work. No guarantees or warrants, express or implied, are provided regarding our recommendations.

12.0) REFERENCES

Environmental Bio-Systems, Inc., Sampling Report, Environmental Bio-Systems, Inc., project #003-163-01, dated January 15, 1991.

Environmental Bio-Systems, Inc., Work Plan For Soil and Groundwater Exploration. Environmental Bio-Systems, Inc., work plan #003-WP91016, dated March 11, 1991.

Environmental Bio-Systems, Inc., Soil Sampling Report, Environmental Bio-Systems, Inc., project #003-163-02, dated April 30, 1991.

State of California Department of Water Resources, 1989. Evaluation of Ground Water Resources: , Bulletin No. 118-80.

United States Geological Survey (USGS), Topographic Map, Oakland East Quadrangle, 7.5-minute with 20-foot contour intervals, 1959, photorevised 1980.

TABLE 1 - RESULTS OF SOIL SAMPLE ANALYSES (Results in ug/kg)

Sample	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TPH as Diesel	Total Oil & Grease
B1 5-5.5'	*ND	ND	ND	ND	ND	ND	ND
B2 5-5.5'	ND	ND	ND	ND	ND	ND	ND
B3 5-5.5'	250,000	330	3,700	4,000	24,000	ND	17,000

*ND - Analyte not detected by the stated method.
Note: Detection limits used - TPH as gasoline = 1,000 ug/kg. BTEX = 5.0 ug/kg.
TPH as Diesel = 1,000 ug/kg. TOG = 10,000 ug/kg.

TABLE 2 - RESULTS OF WATER SAMPLE ANALYSES (Results in ug/kg)

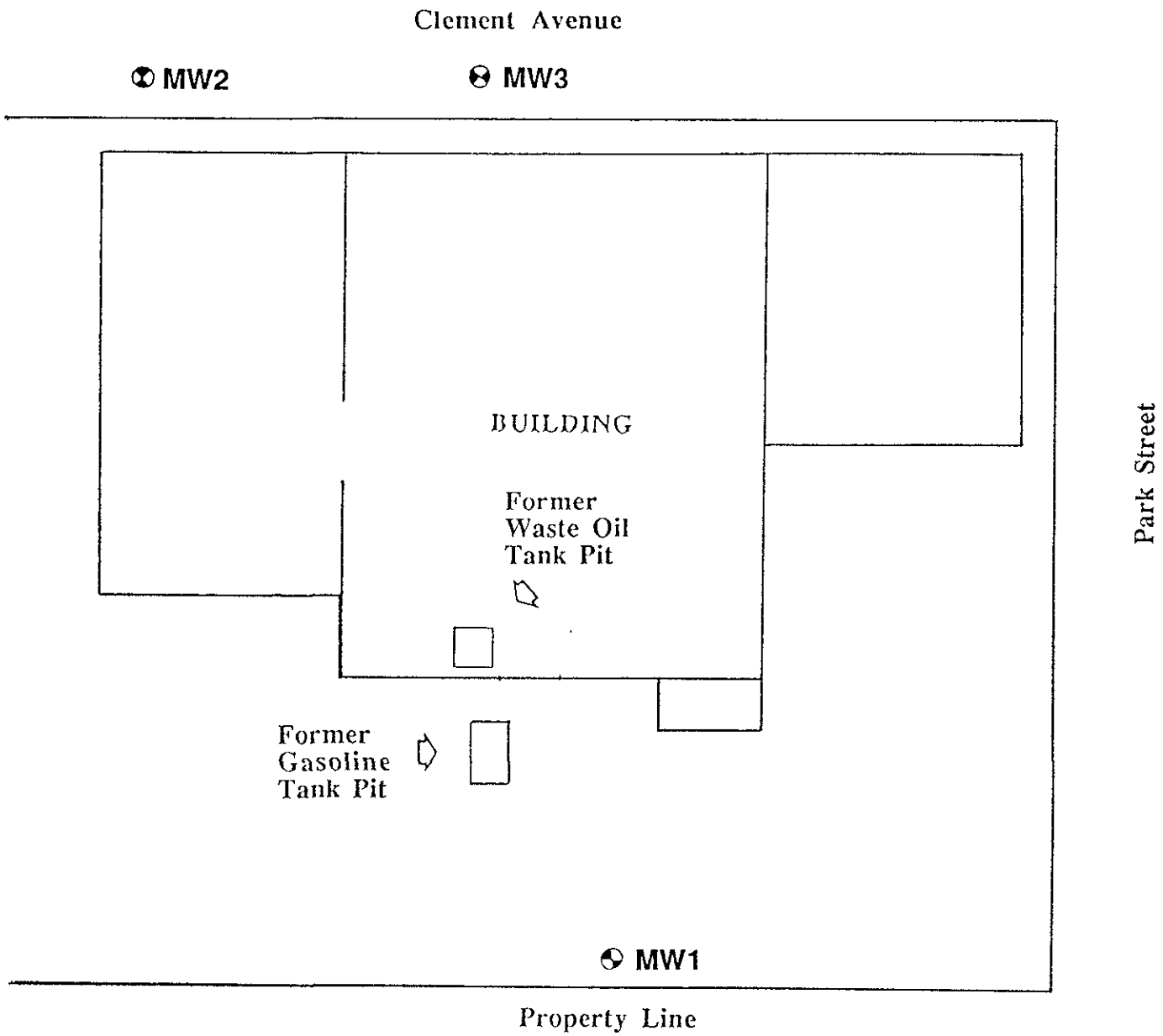
Sample	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TPH as Diesel	Total Oil & Grease
MW-1	*ND	ND	ND	ND	ND	ND	4,000
MW-2	ND	ND	ND	ND	ND	ND	3,000
MW-3	ND	ND	ND	ND	ND	ND	1,000

*ND - Analyte not detected by the stated method.
Note: Detection limits used - TPH as gasoline = 50 ug/kg. BTEX = 0.5 ug/kg.
TPH as Diesel = 50 ug/kg. TOG = 500 ug/kg.

Source: USGS Topographical Map, Oakland East and Oakland West Quadrangles. **Scale - 1" = 2,000 feet**

SITE LOCATION MAP

FIGURE 1



EXPLANATION

MW3 - Monitoring Well

N

Scale - 1" = 30 feet

ENVIRONMENTAL BIO-SYSTEMS, INC.
Innovative Solutions for a Better Environment
30028 Industrial Pkwy., S.W.
Suite C
Hayward, CA 94544

DATE: 12-10-91
DRAWN BY: SLS
APPROV'D: TMB

SITE DIAGRAM A

KEIZER ESTATE
1825 PARK STREET
ALAMEDA, CALIFORNIA

FIGURE 2

APPENDIX A

LOGS OF SOIL BORINGS

SOIL BORING LOG

BORING DESIGNATION: B1
MONITORING WELL INSTALLED: MW1
DATE OF DRILLING: 11-18-91
WELL DIAMETER: 2"
CASING TYPE: SCHED 40 - PVC
SLOT SIZE: 0.02"
LOGGED BY: JAMES A. JACOBS
SIGNATURE:
REGISTRATION:
EXPIRATION:

DEPTH (FEET)	SAMPLE NO.	BLOW CNT.	P.I.D.	GRAPHIC LOG	SOIL TYPE	WELL CONST.	DESCRIPTION AND REMARKS
							Asphalt
-1-					GP		Sandy Gravel, dark brown, 20% organic, damp, no odor
-2-							
-3-							
-4-					SP		Sand with traces of Clay, brown, fine grained, damp, no odor
-5-							
-6-					SC		Clayey Sand, Clay 30%, brown, fine grained, moist, no odor
-7-						▽	
-8-							Water encountered at 7'
-9-					SP		Sand with traces of Clay, poorly graded, brown, wet, no odor
-10-							
-11-							
-12-							
-13-							
-14-							
-15-							
-16-							BOTTOM OF BORING AT 15'
-17-							
-18-							
-19-							
-20-							

ENVIRONMENTAL BIO-SYSTEMS, INC.
Innovative Solutions for a Better Environment
30028 Industrial Pkwy., S.W.
Suite C
Hayward, CA 94544

DATE DRAWN: 12/5/91
JOB NO: 003-190.
DRAWN BY: HA
APP'D BY: TMB

SITE:
Keizer Estate
1825 Park Street
Alameda, California

SOIL BORING LOG

BORING DESIGNATION: B2 | MONITORING WELL INSTALLED: MW2

DATE OF DRILLING: 11-18-91 | WELL DIAMETER: 2"

CASING TYPE: SCHED 40 - PVC | SLOT SIZE: 0.02"

LOGGED BY: JAMES A. JACOBS | SIGNATURE:

REGISTRATION: | EXPIRATION:

DEPTH (FEET)	SAMPLE NO.	BLOW CNT.	P.I.D.	GRAPHIC LOG	SOIL TYPE	WELL CONST.	DESCRIPTION AND REMARKS
							Asphalt, road fill Gravel.
-1-					GP		Sandy Gravel, brown, damp, no odor
-2-					SC		Clayey Sand, Clay 30%, green, medium to fine grained, moist, no odor
-3-							
-4-							
-5-					SC		Clayey Sand, Clay 30%, brown, medium to fine grained, moist, no odor
-6-							
-7-							
-8-						▽	Water encountered at 8'
-9-							
-10-					SP		Sand, poorly graded, brown to gray brown, wet, no odor
-11-							
-12-							
-13-					SC		Clayey Sand, Clay 10%, gray, wet, no odor
-14-							
-15-							BOTTOM OF BORING AT 15'
-16-							
-17-							
-18-							
-19-							
-20-							

ENVIRONMENTAL BIO-SYSTEMS, INC.
Innovative Solutions for a Better Environment
30028 Industrial Pkwy., S.W.
Suite C
Hayward, CA 94544

DATE DRAWN: 12/5/91
JOB NO: 003-190
DRAWN BY: HA
APP'D BY: TMB

SITE:
Keizer Estate
1825 Park Street
Alameda, California

SOIL BORING LOG

BORING DESIGNATION: B3 | MONITORING WELL INSTALLED: MW3

DATE OF DRILLING: 11-18-91 | WELL DIAMETER: 2"

CASING TYPE: SCHED 40 - PVC | SLOT SIZE: 0.02"

LOGGED BY: JAMES A. JACOBS | SIGNATURE:

REGISTRATION: | EXPIRATION:

DEPTH (FEET)	SAMPLE NO.	BLOW CNT.	P.I.D.	GRAPHIC LOG	SOIL TYPE	WELL CONST.	DESCRIPTION AND REMARKS
							Asphalt, road fill Gravel
-1-					GP		Sandy Gravel, brown, damp, no odor
-2-					SP		Sand with traces of Clay, light brown, medium grained, moist, no odor
-3-					SC		Clayey Sand, Clay 40%, green, medium to fine grained, moist, faint to strong hydrocarbon odor
-4-							
-5-							
-6-							
-7-							
-8-							
-9-							
-10-					SC	▽	Clayey Sand, Clay 10-50%, tan, medium grained, moist to wet, faint odor to no odor Water encountered at 10'
-11-							
-12-							
-13-							
-14-							
-15-							
-16-							
-17-							BOTTOM OF BORING AT 16-1/2'
-18-							
-19-							
-20-							

ENVIRONMENTAL BIO-SYSTEMS, INC.
Innovative Solutions for a Better Environment
30028 Industrial Pkwy., S.W.
Suite C
Hayward, CA 94544

DATE DRAWN: 12/5/91
JOB NO: 003-190
DRAWN BY: HA
APP'D BY: TMB

SITE:
Keizer Estate
1825 Park Street
Alameda, California

APPENDIX B

WELL SAMPLING DATA LOGS

WATER SAMPLING DATA FORM

ARTESIAN ENVIRONMENTAL CONSULTANTS, INC.

Project Name	Project No	Well Name	Date	Time	Name	Page
Ron Goode Toyota		MW-1	11-18-91	15:18	JJacobs	1 of 3

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
15.0'	14.86	☒ Monitor Well
DTW (ft.) 5.87	Date/Time 11-13-91 1525	☐ Sampling Port
Well Diam. (in.) 2"	LHC Present? ☐ Yes ☒ No	☐ Other (describe)
		LHC Thickness n/a

	Time	pH Probe No	Temp Probe No.	Cond Probe No.
1	1523	7.25	62°F	0.83 mmhos
2	1528	7.25	64.2°F	0.84 mmhos
3	1528	7.23	63.5°F	0.69 mmhos

Initial Height of Water in Casing (ft)	Formulas and Conversions	Sampling Equipment
9.13	s = well radius in ft. h = ht. of water column in ft. vol of column = $\pi r^2 h$ 7.48 gal / ft³	Dedicated System ☐ Bladder Pump ☐ Bailer
Volume (gal) 1.49	V_1 " casing = 0.163 gal / ft. $V_{1.5}$ " casing = 0.367 gal / ft. V_2 " casing = 0.653 gal / ft. $V_{3.5}$ " casing = 0.826 gal / ft V_4 " casing = 1.470 gal / ft. V_6 " casing = 2.610 gal / ft. V_{10} " casing = 4.080 gal / ft.	PVC Bailer ☐ 1/2 in. ☒ 1 1/4 in. ☐ 3 in.
Volume to be Evacuated ☐ x 3 ☒ x 4 5.96		Sampling Port No.
		Volume (gal) / Rate (gpm)

Evacuation	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	1525	1526	1725	
Start Time	1520	1524	1720	
Minutes	5 min	2 min	4.5	
Amt Evacuated	5 gal	~2 gal	4.5 gal	gal
Total Evacuated	11.5 gal			
Total Minutes	11 min			
Evacuation Rate	1.0 gpm			

Pumped Dry?	After (gal)
☐ Yes ☒ No	
Depth to Water During Pumping (ft) 9.51'	Time 1525
Depth to Water for 80% Recovery	Recovery Rate (gpm)
Sampled After: ☐ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling

Recovery	Time	DTW
1	1525	7.87'
2		
3		
4		
5		

Point of Collection	Time Samples Taken	Date
☐ PE Hose ☒ End of Bailer ☐ Other:	1531	11-18-91
	Depth to Water (ft) 8.51'	Refrigerated? ☒ Yes ☐ No
Sample Color Tan	Odor none	
Sediment / Foreign Matter		
Sampling Sequence	3) 40-ml VOAs, (3) 1l	

Sample ID No.	Volume (mL)	Time	Preservative	Analysis	Lab
MW-1-11-18-91	1l	1725	none	TPH-d, TOG	"

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

Notes: Dem well (6.2 gal) 11-13-91
T° Cond [illegible] stabilized 11-13-91

WATER SAMPLING DATA FORM

ARTESIAN ENVIRONMENTAL CONSULTANTS, INC.

Project Name	Project No.	Well Name	Date	Time	Name	Page of
Ron Goode Toyota		MW-2	11-18-91	1432	J Jacobs	2 3

Well Depth (ft.)	Sounded Depth (ft.)	Well Type	Time	pH Probe No.	Temp Probe No.	Cond Probe No.
15.0'	14.76	☑ Monitor Well	1 1442	7.77	13.1	2.64 umhos
DTW (ft.) 4.16'	Date/Time 11-13-91 1713	☐ Sampling Port	2 1445	7.78	13.2	2.71
		☐ Other (describe)	3 1445	7.81	13.3	2.78
Well Diam. (in.) 2"	LHC Present? ☐ Yes ☑ No	LHC Thickness none				

Initial Height of Water in Casing (ft)	Formulas and Conversions	Sampling Equipment	Point of Collection	Time Sample Taken	Date
10.84'	z = well radius in ft. h = ht. of water column in ft. vol. of column = $\pi r^2 h$ 7.48 gal/ft³	Dedicated System ☐ Bladder Pump ☐ Bailer	☐ PE Hose ☑ End of Bailer ☐ Other:	1457	11-18-91
Volume (gal) 1.77	V_2 = " casing = 0.163 gal / ft. V_3 = " casing = 0.367 gal / ft. V_4 = " casing = 0.653 gal / ft. $V_{4.5}$ = " casing = 0.826 gal / ft. V_5 = " casing = 1.470 gal / ft. V_6 = " casing = 2.610 gal / ft. V_{10} = " casing = 4.080 gal / ft.	PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.	Depth to Water (ft)		Refrigerated? ☑ Yes ☐ No
Volume to be Evacuated ☐ x 3 ☑ x 4 7.07 to 8		Sampling Port No.	Sample Color tan	Odor none	
		Volume (gal) / Rate (gpm)	Sediment / Foreign Matter Silt		
			Sampling Sequence (3) 40ml VOAs, (3) 1l		

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	1458	1145	1735	
Start Time	1433		1729	
Minutes	5.0	5.0	5.5	
Amt Evacuated	5.0 gal	5.0 gal	5.5 gal	gal
Total Evacuated	10.0 gal			
Total Minutes	10 min			
Evacuation Rate	1.0 gpm			

Sample ID No.	Volume (mL)	Time	Preservative	Analysis	Lab
MW-2-11-18-91	40	1457	none	TPH-g BTEX	Chrome
MW-2-11-18-91	1l	1735	none	TPH-d, TOG	"

Pumped Dry?	After (gal)	Recovery	Time	DTW
☑ Yes ☐ No		1	1502	5.2
Depth to Water During Pumping (ft) 9.43	Time 1430	2		
Depth to Water for 80% Recovery	Recovery Rate (gpm)	3		
Sampled After: ☐ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling	4		
		5		

Container Color: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, ml = milliliter, l = liter, Other: Describe

Notes: Dew well (7.2 gal removed) 11-14-91
pH, cond. temp Stability @ 11-14-91

WATER SAMPLING DATA FORM

ARTESIAN ENVIRONMENTAL CONSULTANTS, INC.

Project Name	Project No	Well Name	Date	Time	Name	Page of
Ron Goode Toyota		MW-3	11-18-91	13:28	J Jacobs	3 3

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
15.0'	14.51	☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.) 4.15'	Date/Time 11-13-91 16:24	
Well Diam. (in.) 2"	LHC Present? ☐ Yes ☒ No	LHC Thickness None

	Time	pH Probe No.	Temp Probe No.	Cond Probe No.
1	1355	7.62	64.7 F°	1.51 x 1000 umhos
2	1358	7.65	64.8	1.31 x 1000
3	1401	7.57	65.1	1.15 x 1000

Initial Height of Water in Casing (ft)	Formulas and Conversions	Sampling Equipment
10.85	r = well radius in ft h = ht. of water column in ft. vol. of column = $\pi r^2 h$ 7.48 gal / ft³	☒ Pump Dedicated System ☐ Bladder Pump ☐ Bailer PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.
Volume (gal) 1.77	V_{2} " casing = 0.163 gal / ft. V_{3} " casing = 0.367 gal / ft. V^{1} " casing = 0.653 gal / ft. $V_{4.5}$ " casing = 0.826 gal / ft. V^{2} " casing = 1.470 gal / ft. V_{6} " casing = 2.610 gal / ft. V_{10} " casing = 4.080 gal / ft.	Sampling Port No.
Volume to be Evacuated ☐ x 3 ☒ x 4 7.08		Volume (gal) / Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	1337	1345	1745	
Start Time	1328	1350	1739	
Minutes	5.0	5.0	5.5	
Amt Evacuated	5.0 gal	5 gal	5.5 gal	gal
Total Evacuated	15.0 gal			
Total Minutes	15.0 min			
Evacuation Rate	5.0 gpm			

Pumped Dry?	After (gal)
☐ Yes ☒ No	
Depth to Water During Pumping (ft) 9.21	Time 1351
Depth to Water for 80% Recovery	Recovery Rate (gpm)
Sampled After: ☐ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling

Recovery

	Time	DTW
1	1402	9.21
2		
3		
4		
5		

Point of Collection	Time Samples Taken	Date
☐ PE Hose ☒ End of Bailer ☐ Other:	1402	11-18-91
	Depth to Water (ft) 9.21	Refrigerated? ☒ Yes ☐ No
Sample Color tan	Odor none	
Sediment / Foreign Matter some silt		
Sampling Sequence (3) 40 mL VOA, (3) ℓ		

Sample ID No.	Volume (mL)	Time	Preservative	Analysis	Lab
MW-3-11-18-91	40 mL	1402	None	TPH-g, BTEX	Chroma
MW-3-11-18-91	ℓ	1745	none	TPH-d, TOG	Chroma

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

Notes: Dev well (7 gal bailed) 11-14-91
pH, cond. Temp stable [illegible]

APPENDIX C

LABORATORY ANALYSIS DATA SHEETS
&
CHAIN OF CUSTODY DOCUMENTATION FOR
SOIL SAMPLES

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

November 18, 1991 ChromaLab File No.: 1191089

ZACCOR CORP.

Attn: Gary Zaccor

RE: Three soil samples for Gasoline/BTEX, Diesel, and OIl & Grease analyses

Project Name: PARK ST.
Date Sampled: Nov. 8, 1991 Date Submitted: Nov. 9, 1991
Date Extracted: Nov. 15, 1991 Date Analyzed: Nov. 15, 1991

RESULTS:

Sample I.D.	Gasoline (mg/kg)	Diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)	Oil & Grease (mg/kg)
B-1-5.0-5.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B-2-5.0-5.5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B-3-5.0-5.5	250	N.D.	330	3700	4000	24000	17
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	91.5%	87.3%	85.7%	93.9%	100.8%	106.6%	----
DUP SPIKE REC	94.5%	91.8%	98.9%	105.4%	106.9%	107.2%	----
DET. LIMIT	1.0	1.0	5.0	5.0	5.0	5.0	10
METHOD OF ANALYSIS	5030/ 8015	3550/ 8015	8020	8020	8020	8020	5520 E&F

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

ENVIRONMENTAL BIO-SYSTEMS, INC.
Innovative Solutions for a Better Environment
30028 Industrial Pkwy., S.W.
Suite C
Hayward, CA 94544

CHAIN OF CUSTODY

PROJECT NUMBER: PARK St.
CLIENT: Zaccor Corp
SITE: 1825 Park St
Alameda California

ALL SAMPLES TO BE ANALYZED USING METHODS AND DETECTION LIMITS ESTABLISHED BY REGION _____ OF THE STATE WATER RESOURCES CONTROL BOARD.

INSTRUCTIONS:

CHROMALAB FILE # 1191089
ORDER # 4111

SAMPLE I.D.	MATRIX	NUMBER OF CONTAINERS	COMPOSITE	ANALYSIS: TPH-gasoline	BTEX	TPH-diesel	Total Oil + Grease 5520 E+F	TURNAROUND	SAMPLE CONDITION	LAB SAMPLE#
B-1-5.0-5.5	Soil	(1)		x	x	x	x	Normal		
B-2-5.0-5.5	"	(1)		x	x	x	x	"		
B-3-5.0-5.5	"	(1)		x	x	x	x	"		

SAMPLING COMPLETED: DATE 11/8/91 TIME 1546
SAMPLING PERFORMED BY: James A Jacobs RG

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
James A Jacobs	11/8/91	16:00	Lori Lamz	11/8/91	16:00
Lori Lamz	11/9/91	8:00 AM	Kelley Mawhinney	11/9/91	8:00
Kelley Mawhinney	11-9-91	2:17 pm		11/9/91	14:17

SHIPPED VIA: | DATE SENT | TIME SENT | COOLER #

APPENDIX D

LABORATORY ANALYSIS DATA SHEETS & CHAIN OF CUSTODY DOCUMENTATION FOR WATER SAMPLES

CHROMALAB, INC.

Analytical Laboratory (E684)

5 DAYS TURNAROUND

November 26, 1991 ChromaLab File No.: 1191203

ENVIRONMENTAL BIO-SYSTEMS, INC.

Attn: Jim Jacobs

RE: Three water samples for Gasoline/BTEX, Diesel, and Oil & Grease analyses

Project Name: RON GOODE TOYOTA
Project Location: 1825 Park Street, Alameda, CA
Date Sampled: Nov. 18, 1991 Date Submitted: Nov. 19, 1991
Date Extracted: Nov. 25, 1991 Date Analyzed: Nov. 25, 1991

RESULTS:

Sample I.D.	Gasoline (µg/l)	Diesel (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl Benzene (µg/l)	Total Xylenes (µg/l)	Oil & Grease (mg/l)
MW-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	4.0
MW-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	3.0
MW-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	98.0%	92.6%	103.4%	106.4%	108.9%	107.9%	----
DUP SPIKE REC	93.8%	88.0%	85.7%	93.9%	100.8%	106.6%	----
DET. LIMIT	50	50	0.5	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/ 8015	3510/ 8015	602	602	602	602	5520 B&F

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam
Laboratory Director

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ENVIRONMENTAL BIO-SYSTEMS, INC.
Innovative Solutions for a Better Environment
30028 Industrial Pkwy., S.W.
Suite C
Hayward, CA 94544

CHROMALAB FILE # 11
ORDER # 4250

CHAIN OF CUSTODY

PROJECT NUMBER

CLIENT Ron Goode Toyota

SITE 1825 Park Street
Alameda CA

ALL SAMPLES TO BE ANALYZEL
METHODS AND DETECTION LIM
ESTABLISHED BY REGION ____
OF THE STATE WATER RESOUR
CONTROL BOARD.

INSTRUCTIONS:
INVOICE TO
TIM BABCOCK
@ EBS

SAMPLE I.D.	MATRIX	NUMBER OF CONTAINERS	COMPOSITE	ANALYSIS: TPH-gas 8015	BTEX 8020	Total oil+grease 5530 D+E	TPH-diesel 8015	TURNAROUND	SAMPLE CONDITION
MW-1 11-18-91	Water	(3) 40ml VOA		X	X			5 day	No preservative
MW-1 11-18-91	Water	(3) Liter				X	X		
MW-2 11-18-91	Water	(3) 40ml VOA		X	X				
MW-2 11-18-91	Water	(3) Liter				X	X		
MW-3 11-18-91	Water	(3) 40ml VOA		X	X				
MW-3 11-18-91	Water	(3) Liter				X	X		

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY
	11/18/91	1850	James A Jacobs

RELEASED BY: James A Jacobs	DATE: 11/18/91	TIME: 1900	RECEIVED BY: Olivia Jacobs	DATE: 11/18/91
RELEASED BY: Olivia Jacobs	DATE: 11/19/91	TIME: 1208	RECEIVED BY:	DATE: 11/19/91
RELEASED BY:	DATE:	TIME:	RECEIVED BY:	DATE:

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #