aqua science engineers inc.

April 15, 2002

QUARTERLY GROUNDWATER MONITORING REPORT
APRIL 2002 GROUNDWATER SAMPLING
ASE JOB NO. 3411
at
Hutch's Carwash
17945 Hesperian Boulevard
San Lorenzo, California

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
208 West El Pintado Road
Danville, CA 94526
(925) 820-9391

1.0 INTRODUCTION

The following is a report detailing the results of the April 2002 quarterly groundwater sampling at the Hutch's Carwash property located at 17945 Hesperian Boulevard in San Lorenzo, California (Figures 1 and 2).

2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On March 4, 2002, ASE measured the depth to water in each site monitoring well using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen. No free-floating hydrocarbons or sheen were observed in any of the monitoring wells. Groundwater elevation data is presented in Table One.

The groundwater flow is to the west at a gradient of 0.002-feet/foot. Groundwater elevation (potentiometric surface) contours are plotted on Figure 2.

3.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

On March 4, 2002, ASE collected groundwater samples from monitoring wells MW-1 and MW-2 for analysis. Monitoring well MW-3 is no longer being sampled because hydrocarbons have not been detected since its installation. Prior to sampling, the wells were purged of four well casing volumes of groundwater. The pH, temperature, and conductivity of the purge water were monitored during evacuation, and samples were not collected until these parameters stabilized. Samples were collected from each well using dedicated polyethylene bailers. The groundwater samples were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, labeled, and stored on ice for transport to Severn Trent Laboratories (STL) San Francisco, Inc. of Pleasanton, California under appropriate chain of custody documentation.

The well sampling purge water was contained in sealed and labeled 55-gallon steel drums. The well sampling field logs are included as Appendix A.

The groundwater samples were analyzed by STL San Francisco for total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 5030/8015 and benzene, toluene, ethyl benzene, and total xylenes (collectively known as BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020.

The analytical results are tabulated in Table Two, and copies of the certified analytical report and chain of custody form are included in Appendix B.

4.0 CONCLUSIONS

The groundwater samples collected from monitoring well MW-1 contained 1,900 parts per billion (ppb) TPH-G, 30 ppb benzene, 6.7 ppb toluene, 24 ppb ethyl benzene, 30 ppb total xylenes, and 1,000 ppb MTBE. The groundwater samples collected from monitoring well MW-2 did not contain any of the compounds analyzed above laboratory detection limits. Monitoring well MW-3 was removed from the sampling schedule in January 2001 because hydrocarbons had not been detected since its installation.

The benzene and MTBE concentrations in groundwater samples collected from monitoring well MW-1 exceeded the California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water. However, the benzene and MTBE concentrations did not exceed California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB) Risk Based Screening Levels (RBSLs) presented in the "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" document dated August 2000 where water is not a current of potential source of drinking water. The total xylene concentration detected in the groundwater sample collected from MW-1 exceeded the RBSL, but was below the DHS MCL.

In general, hydrocarbon concentrations detected from monitoring well MW-1 are relatively consistent with previous historical concentrations in that monitoring well. MTBE has historically been the only compound detected in the groundwater samples collected from MW-2. MTBE was not detected above the laboratory detection limit in monitoring well MW-2 this quarter.

5.0 RECOMMENDATIONS

ASE recommends that an area well survey be conducted to identify water wells within 2,000-feet of the subject site. ASE recommends the case be reviewed for closure if no drinking water wells are located within the site vicinity.

6.0 REPORT LIMITATIONS

The results of this assessment represent conditions at the time of groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

Aqua Science Engineers appreciates the opportunity to provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Erik H. Paddleford
Associate Geologist

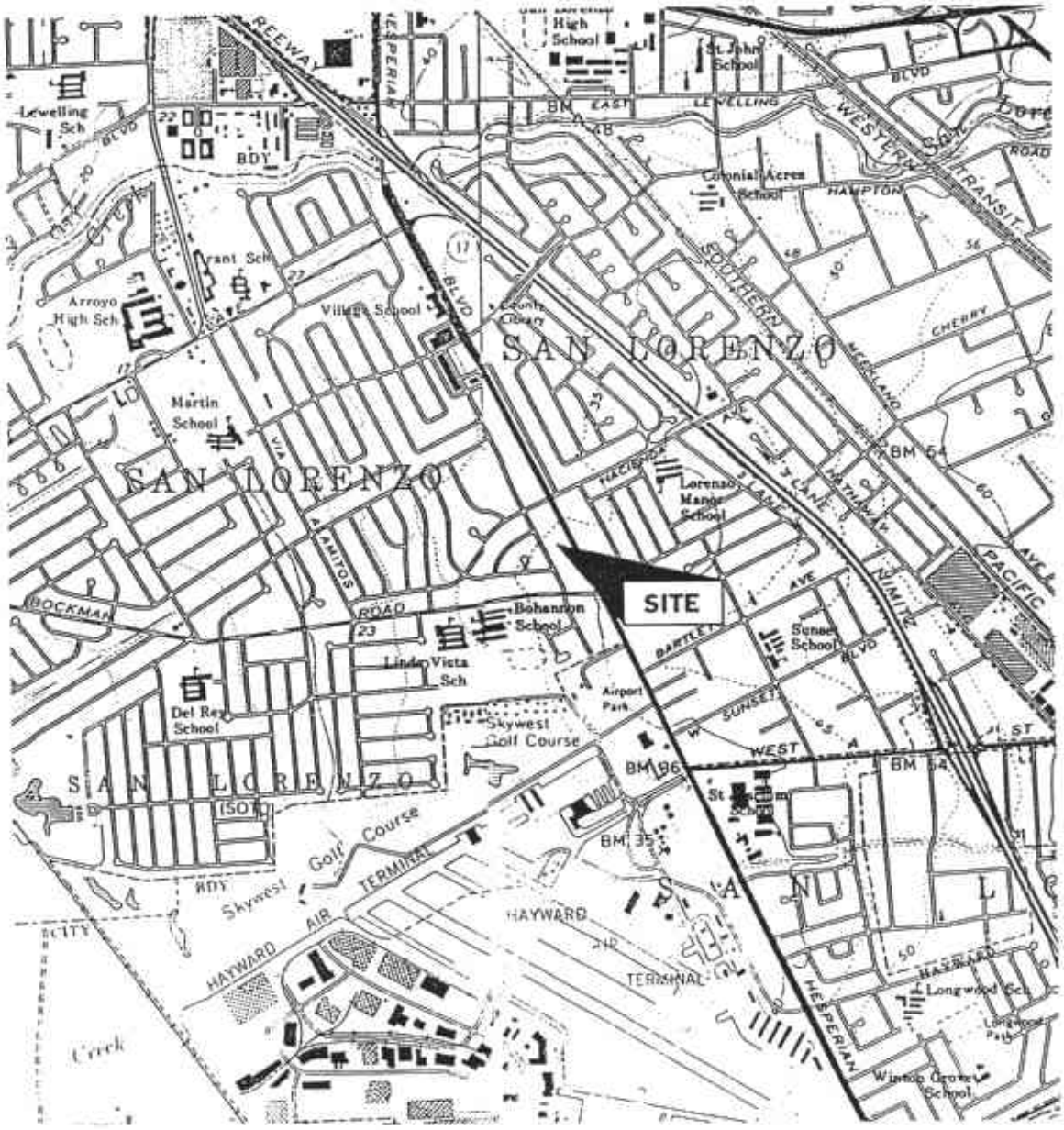
Robert E. Kitay, R.G., R.E.A.
Senior Geologist

Attachments: Figures 1 and 2
Appendices A and B

cc: Mr. Kirk Hutchison, Hutch's Car Wash
Mr. Scott Seery, Alameda County Health Care Services Agency
Mr. Chuck Headlee, California Regional Water Quality Control Board

NORTH

NOT TO SCALE



LOCATION MAP

Hutch's Carwash
17945 Hesperian Boulevard
San Lorenzo, California

AQUA SCIENCE ENGINEERS, INC. | Figure 1

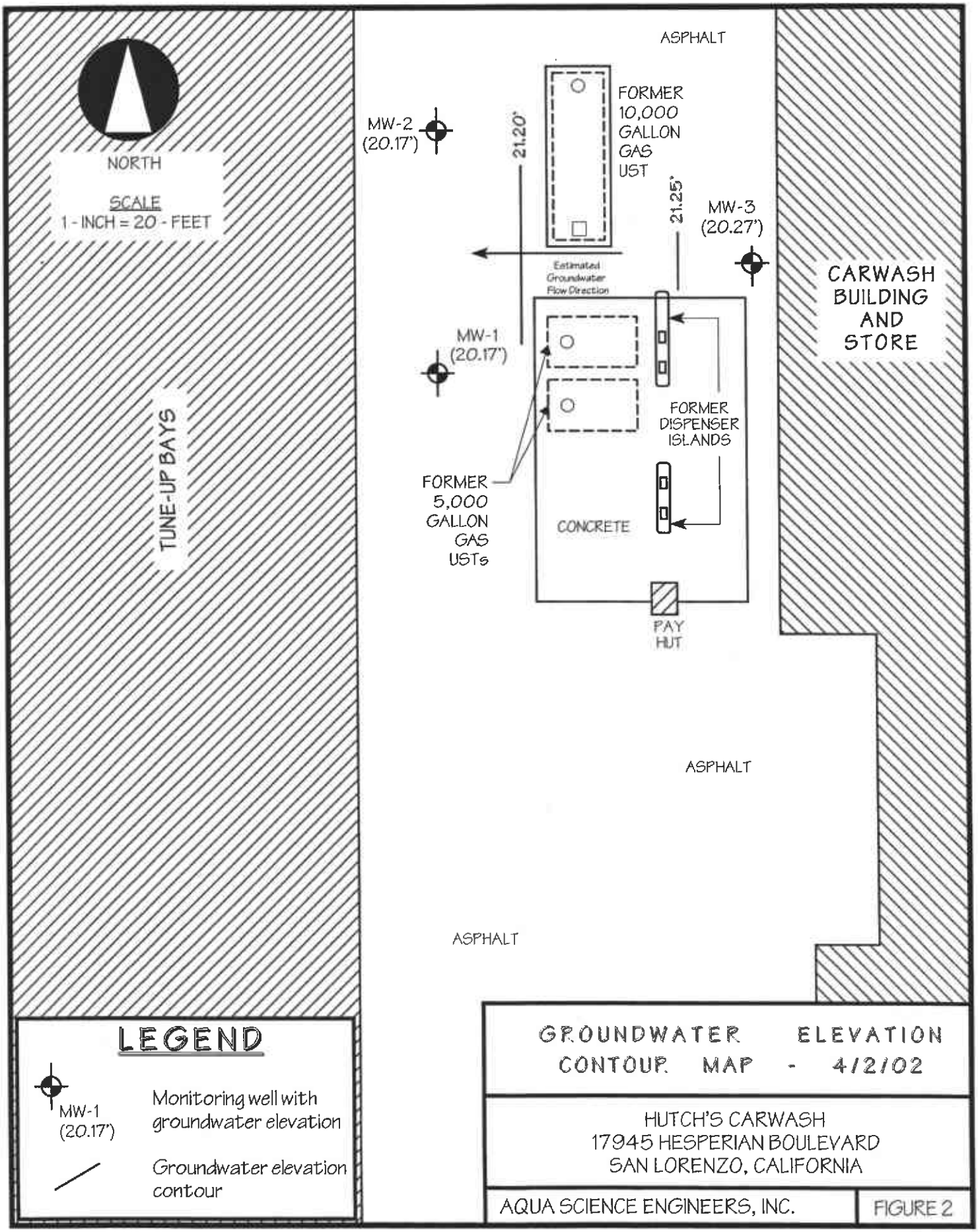

NORTH
SCALE
1 - INCH = 20 - FEET
TUNE-UP BAYS
ASPHALT
MW-2
(20.17')
21.20'
FORMER
10,000
GALLON
GAS
UST
21.25'
MW-3
(20.27')
Estimated
Groundwater
Flow Direction
CARWASH
BUILDING
AND
STORE
MW-1
(20.17')
FORMER
DISPENSER
ISLANDS
FORMER
5,000
GALLON
GAS
USTs
CONCRETE
PAY
HUT
ASPHALT
ASPHALT
LEGEND
MW-1
(20.17')
Monitoring well with
groundwater elevation
Groundwater elevation
contour
GROUNDWATER ELEVATION
CONTOUR MAP - 4/2/02
HUTCH'S CARWASH
17945 HESPERIAN BOULEVARD
SAN LORENZO, CALIFORNIA
AQUA SCIENCE ENGINEERS, INC.
FIGURE 2

TABLE ONE
Groundwater Elevation Data

Well I.D.	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	10-06-99	35.00	15.58	19.42
	01-13-00		15.58	19.42
	04-12-00		14.75	20.25
	07-19-00		15.29	19.71
	10-25-00		15.56	19.44
	01-16-01		15.22	19.78
	04-04-01		15.05	19.95
	07-06-01		15.49	19.51
	10-01-01		15.78	19.22
	01-07-02		13.83	21.17
	04-02-02		**14.83**	**20.17**
MW-2	10-06-99	35.21	15.84	19.37
	01-13-00		15.78	19.43
	04-12-00		14.94	20.27
	07-19-00		15.54	19.67
	10-25-00		15.81	19.40
	01-16-01		15.50	19.71
	04-04-01		15.28	19.93
	07-06-01		15.73	19.48
	10-01-01		16.06	19.15
	01-07-02		14.08	21.13
	04-02-02		**15.04**	**20.17**
MW-3	10-06-99	34.47	14.98	19.49
	01-13-00		14.98	19.49
	04-12-00		14.09	20.38
	07-19-00		14.70	19.77
	10-25-00		14.98	19.49
	01-16-01		14.58	19.89
	04-04-01		14.43	20.04
	07-06-01		14.85	19.62
	10-01-01		15.21	19.26
	01-07-02		13.24	21.23
	04-02-02		**14.20**	**20.27**

TABLE TWO

Certified Analytical Results of **GROUNDWATER** Samples
All results are in **parts per billion**

Well	Date Sampled	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
MW-1	10-06-99	1,500	3.3	2.3	27	72	120
	01-13-00	1,500	15	19	19	33	650
	04-12-00	1,700	18	13	45	79	2,600
	07-19-00	2,200	31	< 5.0	81	100	2,000
	10-25-00	3,300	20	< 5.0	9.8	9.4	3,300
	01-16-01	4,100	34	14	60	120	1,300
	04-04-01	2,900	14	< 0.5	34	32	2,000
	07-06-01	1,300	4.4	< 0.5	12	13	700
	10-01-01	1,100	4.1	< 0.5	18	19	520
	01-07-02	1,400	34	< 0.5	13	15	1,300
	04-02-02	**1,900**	**30**	**6.7**	**24**	**30**	**1,000**
MW-2	10-06-99	< 50	< 0.5	< 0.5	< 0.5	< 0.5	18
	01-13-00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	16
	04-12-00	< 100	< 1.0	< 1.0	< 1.0	< 1.0	240
	07-19-00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	10-25-00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	6.0
	01-16-01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	8.2
	04-04-01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	07-06-01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	5.9
	10-01-01	< 50	< 0.5	< 0.5	< 0.5	< 0.5	21
	01-07-02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	04-02-02	**< 50**	**< 0.5**	**< 0.5**	**< 0.5**	**< 0.5**	**< 5.0**

TABLE TWO

Certified Analytical Results of **GROUNDWATER** Samples

All results are in **parts per billion**

Well	Date Sampled	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
MW-3	10-06-99	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	01-13-00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	04-12-00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	07-19-00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	10-25-00	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	01-16-01	Not	Sampled				
	04-04-01	Not	Sampled				
	07-06-01	Not	Sampled				
	10-01-01	Not	Sampled				
	01-07-02	Not	Sampled				
	04-02-02	**Not**	**Sampled**				
DHS MCL		NE	1	150	700	1,750	13
RBSL		400	46	130	290	13	1,800

Notes:

- Most recent concentrations are in **bold**.
- Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.
- DHS MCL = California Department of Health Services maximum contaminant level for drinking water
- RBSL = Risk based screening levels presented in the "Application of Risk-Based Screening Levels and Decision Making to Sites With Impacted Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.
- NE = DHS MCL not established

APPENDIX A

Well Sampling Field Logs

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WELL SAMPLING FIELD LOG

Project Name and Address: Hutch's Garages 4
Job #: 3411 Date of sampling: 4/2/02
Well Name: MW-1 Sampled by: EP
Total depth of well (feet): 26.68 Well diameter (inches): 2
Depth to water before sampling (feet): 14.83
Thickness of floating product if any: —
Depth of well casing in water (feet): 11.85
Number of gallons per well casing volume (gallons): 1.9
Number of well casing volumes to be removed: ~~7.6~~ 4
Req'd volume of groundwater to be purged before sampling (gallons): 7.6
Equipment used to purge the well: bailer
Time Evacuation Began: 1330 Time Evacuation Finished: 1350
Approximate volume of groundwater purged: 7
Did the well go dry?: NO After how many gallons: —
Time samples were collected: 1400
Depth to water at time of sampling: —
Percent recovery at time of sampling: —
Samples collected with: bailer
Sample color: clear/brown Odor: none
Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	65.2	5.93	893
2			
3			
4			

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-1	3	40 ml VOA	x	x	

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Hutch's Carwash
Job #: MW-2 Date of sampling: 4/2/02
Well Name: 3411 Sampled by: EP
Total depth of well (feet): 25.56 Well diameter (inches): 2
Depth to water before sampling (feet): 15.01
Thickness of floating product if any: —
Depth of well casing in water (feet): 10.52
Number of gallons per well casing volume (gallons): 1.68
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 6.7
Equipment used to purge the well: bailer
Time Evacuation Began: 1300 Time Evacuation Finished: 1315
Approximate volume of groundwater purged: 6.5
Did the well go dry?: no After how many gallons: —
Time samples were collected: 1320
Depth to water at time of sampling: —
Percent recovery at time of sampling: —
Samples collected with: bailer
Sample color: clear/brown Odor: none
Description of sediment in sample: silt / f sand

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	67.9	5.95	941
2	67.4	6.09	921
3	66.3	6.16	918
4	66.1	6.19	914

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-2	3	40ml VOA	x	x	

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Hutch's Ground
Job #: MW-3 Date of sampling: 4/2/02
Well Name: 3411 Sampled by: EP
Total depth of well (feet): — Well diameter (inches): 2
Depth to water before sampling (feet): 14.20
Thickness of floating product if any: _____
Depth of well casing in water (feet): _____
Number of gallons per well casing volume (gallons): _____
Number of well casing volumes to be removed: _____
Req'd volume of groundwater to be purged before sampling (gallons): _____
Equipment used to purge the well: _____
Time Evacuation Began: _____ Time Evacuation Finished: _____
Approximate volume of groundwater purged: _____
Did the well go dry?: _____ After how many gallons: _____
Time samples were collected: _____
Depth to water at time of sampling: _____
Percent recovery at time of sampling: _____
Samples collected with: _____
Sample color: Not Sampled Odor: _____
Description of sediment in sample: _____

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis

208 W. El Pintado, Danville, California 94526 • 925-820-9391 • Fax 925-837-4853

APPENDIX B

Certified Analytical Report
and
Chain of Custody Documentation

Submission #: 2002-04-0042

Date: April 9, 2002

SEVERN TRENT SERVICES

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com
CA DHS ELAP#1094

Aqua Science Engineers, Inc.
208 West El Pintado
Danville, CA 94526

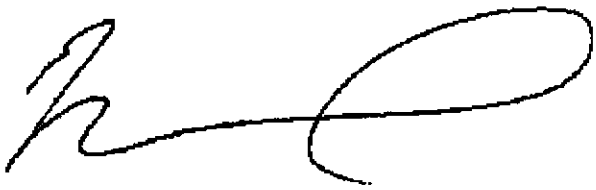
Attn: Erik Paddleford

Project: 3411
Hutch`s Carwash

Attached is our report for your samples received on Tuesday April 2, 2002
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after May 17, 2002 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: vvancil@chromalab.com

Sincerely,



Vincent Vancil
Project Manager

Submission #: 2002-04-0042

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Aqua Science Engineers, Inc.	✉ 208 West El Pintado Danville, CA 94526
Attn: Erik Paddleford	Phone: (925) 820-9391 Fax: (925) 837-4853
3411	Project: Hutch`s Carwash

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-1	Water	04/02/2002 13:20	1
MW-2	Water	04/02/2002 14:00	2

Submission #: 2002-04-0042

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn: Erik Paddleford

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Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Test Method: 8015M
8021B

Prep Method: 5030

Sample ID:	**MW-1**	Lab Sample ID:	2002-04-0042-001
Project:	3411 Hutch`s Carwash	Received:	04/02/2002 15:10
		Extracted:	04/08/2002 17:31
Sampled:	04/02/2002 13:20	QC-Batch:	2002/04/08-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	1900	500	ug/L	10.00	04/08/2002 17:31	
Benzene	30	5.0	ug/L	10.00	04/08/2002 17:31	
Toluene	6.7	5.0	ug/L	10.00	04/08/2002 17:31	
Ethyl benzene	24	5.0	ug/L	10.00	04/08/2002 17:31	
Xylene(s)	30	5.0	ug/L	10.00	04/08/2002 17:31	
MTBE	1000	50	ug/L	10.00	04/08/2002 17:31	
Surrogate(s)						
Trifluorotoluene	75.6	58-124	%	10.00	04/08/2002 17:31	
4-Bromofluorobenzene-FID	86.4	50-150	%	10.00	04/08/2002 17:31	

Submission #: 2002-04-0042

SEVERN TRENT SERVICES

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Test Method: 8015M
8021B

Attn: Erik Paddleford

Prep Method: 5030

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1220 Quarry Lane
Pleasanton, CA 94566

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www.stl-inc.com
www.chromalab.com

CA DHS ELAP#1094

Sample ID:	**MW-2**	Lab Sample ID:	2002-04-0042-002
Project:	3411 Hutch`s Carwash	Received:	04/02/2002 15:10
		Extracted:	04/08/2002 18:03
Sampled:	04/02/2002 14:00	QC-Batch:	2002/04/08-01.02
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	04/08/2002 18:03	
Benzene	ND	0.50	ug/L	1.00	04/08/2002 18:03	
Toluene	ND	0.50	ug/L	1.00	04/08/2002 18:03	
Ethyl benzene	ND	0.50	ug/L	1.00	04/08/2002 18:03	
Xylene(s)	ND	0.50	ug/L	1.00	04/08/2002 18:03	
MTBE	ND	5.0	ug/L	1.00	04/08/2002 18:03	
Surrogate(s)						
Trifluorotoluene	83.0	58-124	%	1.00	04/08/2002 18:03	
4-Bromofluorobenzene-FID	93.1	50-150	%	1.00	04/08/2002 18:03	

Submission #: 2002-04-0042

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1220 Quarry Lane
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www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M
8021B

Prep Method: 5030

Method Blank **Water** **QC Batch # 2002/04/08-01.02**

MB: 2002/04/08-01.02-003 Date Extracted: 04/08/2002 07:48

Compound	Result	Rep.Limit	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	04/08/2002 07:48	
Benzene	ND	0.5	ug/L	04/08/2002 07:48	
Toluene	ND	0.5	ug/L	04/08/2002 07:48	
Ethyl benzene	ND	0.5	ug/L	04/08/2002 07:48	
Xylene(s)	ND	0.5	ug/L	04/08/2002 07:48	
MTBE	ND	5.0	ug/L	04/08/2002 07:48	
Surrogate(s)					
Trifluorotoluene	96.0	58-124	%	04/08/2002 07:48	
4-Bromofluorobenzene-FID	103.0	50-150	%	04/08/2002 07:48	

Submission #: 2002-04-0042

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www.chromalab.com

CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8021B Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/04/08-01.02**

LCS: 2002/04/08-01.02-004 Extracted: 04/08/2002 08:19 Analyzed: 04/08/2002 08:19

LCSD: 2002/04/08-01.02-005 Extracted: 04/08/2002 08:51 Analyzed: 04/08/2002 08:51

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Benzene	93.7	92.3	100.0	100.0	93.7	92.3	1.5	77-123	20		
Toluene	93.3	92.2	100.0	100.0	93.3	92.2	1.2	78-122	20		
Ethyl benzene	96.5	96.1	100.0	100.0	96.5	96.1	0.4	70-130	20		
Xylene(s)	287	283	300	300	95.7	94.3	1.5	75-125	20		
Surrogate(s)											
Trifluorotoluene	470	451	500	500	94.0	90.2		58-124			

Submission #: 2002-04-0042

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CA DHS ELAP#1094

Gas/BTEX Compounds by 8015M/8021

Batch QC report

Test Method: 8015M Prep Method: 5030

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2002/04/08-01.02**

LCS: 2002/04/08-01.02-006 Extracted: 04/08/2002 09:22 Analyzed: 04/08/2002 09:22

LCSD: 2002/04/08-01.02-007 Extracted: 04/08/2002 09:54 Analyzed: 04/08/2002 09:54

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery		RPD	Ctrl.Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recover	RPD	LCS	LCSD
Gasoline	554	538	500	500	110.8	107.6	2.9	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene	545	533	500	500	109.0	106.6		50-150			