LUSH GEOSCIENCES

GEOLOGICAL AND ENVIRONMENTAL SERVICES

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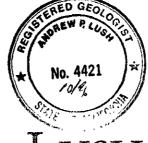
QUARTERLY MONITORING REPORT BECK ROOFING HAYWARD, CALIFORNIA

LUSH GEOSCIENCES JOB NO. 423-001

FEBRUARY 7, 1996

F. William Welter Project Manager

Andrew P. Lush RG 4421



LUSH Geosciences

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1.0 INTRODUCTION

This report was prepared to summarize quarterly monitoring work performed in the investigation of contamination associated with one former 1,000-gallon underground gasoline storage tank at the Beck Roofing Facility in Hayward, California (site). The report describes methods and procedures used to evaluate groundwater quality near the former tank. The methods and procedures used during this phase of investigation included:

- Collecting groundwater samples from the four previously installed wells;
- Analyzing the groundwater samples; and,
- Preparing this report.

This report summarizes the field and laboratory operations conducted, the methods and procedures used, the data obtained, and presents conclusions and recommendations.

2.0 SITE BACKGROUND

The site is an operating roofing company. One wooden structure located on the northwest side of the site contains office and warehouse space. The remainder of the site is used for equipment and materials storage. In May of 1990, a 1,000-gallon underground fuel tank, used to store gasoline, was removed. When the tank was removed, evidence of leakage was noted in soil adjacent to the tank.

We have attached a Generalized Site Plan (Figure 2), showing the site configuration.

2.1 Previous Work

Previous work, performed by other consultants, includes excavation of approximately 350 cubic yards of contaminated soil, drilling and sampling 20 soil borings, installation of four groundwater monitoring wells, excavation of an additional 400 cubic yards of contaminated soil, and quarterly monitoring of the wells. Previous analyses have shown variable contaminant concentrations in one well (MW3), and slight to non detectable levels in the remaining wells.

3.0 QUARTERLY GROUNDWATER SAMPLING

3.1 Field Procedures

Groundwater samples were collected from each well on January 11,1996. Sampling activities were conducted as follows:

- Water and product levels were determined using an electronic water sensitive measuring device. Depth to water or product was measured to an accuracy of 0.01 ft. No free product was encountered.
- Prior to sampling, each well was purged with a submersible pump until at least 3 well volumes of water were removed. The purged water was monitored for temperature, pH, and electrical conductivity (Table 1). Purging continued until these parameters stabilized. The well was allowed to recover until at least 80% of the initial water level had been reached.
- After each well stabilized, a sample was collected with an unused, clean, disposable polyethylene bailer. The collected sample was transferred from the bailer to appropriate 40-ml glass sample vials. All sample containers were filled completely with a convex meniscus to eliminate any trapped air or headspace. Each sample container cap was fitted with a Teflon septum.

• After sampling, the samples were labeled, showing the sample number, well number, date, time, samplers name, and preservation. The samples were refrigerated in a cooler containing ice until delivery to the laboratory to perform the specified analyses. Chain-of-custody documentation was maintained from the sampling location to the laboratory. The chain-of custody was signed by the sampler and placed in the container holding the samples. Condition of the samples was noted on the chain-of-custody document by the laboratory.

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PURGED WATER PARAMETERS GROUNDWATER MONITORING WELLS BECK ROOFING FACILITY HAYWARD, CALIFORNIA

		Subjective					Volume
Well	Date	Evidence	T(°F)	pН	K	3WV_	Purged
			-				
MWI	10/25/94	No Odor	64.7	6.98	1930	27	30
MW2	10/25/94	No Odor	63.8	6.92	2600	27	30
MW3	10/25/94	No Odor	66.5	6.90	2600	27	30
MW4	10/25/94	No Odor	64.5	8.61	2400	27	30
MW1	1/20/95	No Odor	62.9	7.37	570	27	30
MW2	1/20/95	No Odor	62.1	7.20	775	27	30
MW3	1/20/95	No Odor	63.6	7.10	870	27	30
MW4	1/20/95	No Odor	63.3	7.26	728	27	30
MW1	4/11/95	No Odor	65.9	6.66	637	30	35
MW2	4/11/95	No Odor	72.9	6.63	926	30	35
MW3	4/11/95	Odor	70.8	6.62	873	. 30	35
MW4	4/11/95	No Odor	69.2	6.68	791	30	35
MW1	7/13/95	INACCES	SIBLE				
MW2	7/13/95	No Odor	73.6	6.30	819	30	35
MW3	7/13/95	Odor	75.0	6.60	800	30	35
MW4	7/13/95	No Odor	75.0	7.0	739	30	35
MW1	10/10/95	No Odor	68.7	7.2	544	30	30
MW2	10/10/95	No Odor	68.4	7.05	732	30	30
MW3	10/10/95	Odor	68.0	7.79	704	30	30
MW4	10/10/95	No Odor	68.1	7.01	693	30	30
MW1	1/11/96	No Odor	67.0	6.81	565	30	30
MW2	1/11/96	No Odor	65.8	6.43	734	30	30
MW3	1/11/96	No Odor	63.1	7.59	690	30	30
MW4	1/11/96	No Odor	63.2	7.59	644	30	30

K = Conductivity in micromhos

T = Temperature in degrees Fahrenheit

pH = Hydrogen ion concentration

3WV = Calculated three well volumes in gallons

3.2 Groundwater Analyses

Groundwater samples from each accessible well were analyzed for TPHg using Environmental Protection Agency (EPA) Method 8015 (modified for gasoline) with purge and trap EPA Method 5030, and for the associated volatile constituents BTEX using EPA Method 602 with purge and trap EPA Method 5030. Results of the analyses are summarized in Table 2; copies of laboratory reports are attached as Appendix A. All analyses were conducted by Sparger Technology Laboratories, of Sacramento, California, which is certified by the State of California for the requested analyses.

TABLE 2

RESULTS OF LABORATORY ANALYSES GROUNDWATER SAMPLES BECK ROOFING FACILITY HAYWARD, CALIFORNIA								
Well Number				Ethyl-	Total			
and Date	TPHg	Benzene	Toluene	benzene	Xylenes			
MW1								
8/4/94	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0005			
10/25/94	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003			
1/20/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003			
4/11/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003			
7/13/95		INACCESS	SIBLE					
10/10/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	0.0012			
1/11/96	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003			
MW2								
8/4/94	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0005			
10/25/94	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003			
1/20/95	< 0.05	0.0010	< 0.0003	< 0.0003	< 0.0003			
4/11/95	< 0.05	0.0012	< 0.0003	< 0.0003	< 0.0003			
7/13/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003			
10/10/95	< 0.05	0.00069	< 0.0003	< 0.0003	0.052			
<0.0003	< 0.05	< 0.0003	< 0.0003	< 0.0003	0.00067			
	Continued on Next Page							

TPHg = Total petroleum hydrocarbons

Results given in milligrams per liter (parts per million)

<= Less than laboratory minimum detection limits

MW1 = Monitoring well number

RESULTS OF LABORATORY ANALYSES GROUNDWATER SAMPLES BECK ROOFING FACILITY HAYWARD, CALIFORNIA Page2 of 2

II					
Well				T) 1	77 1
Number				Ethyl-	Total
and Date	TPHg	Benzene	Toluene	benzene	Xylenes
MW3					
8/4/94	4.2	0.45	< 0.003	0.18	0.16
10/25/94	<0.0	< 0.0003	< 0.0003	< 0.0003	< 0.0003
1/20/95	4.4	0.58	0.002	0.130	0.160
4/11/95	1.8	0.088	0.0014	0.033	0.027
7/13/95	3.4	0.5	< 0.0003	0.130	0.094
10/10/95	4.2	0.360	0.0024	0.190	0.096 }
1/11/96	< 0.05	< 0.0003	< 0.0003	< 0.0003	<0.0003
MW4					9
8/4/94	< 0.05	< 0.003	0.0005	< 0.0003	< 0.0005
10/25/94	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003
1/20/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003
4/11/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003
7/13/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003
10/10/95	< 0.05	< 0.0003	< 0.0003	< 0.0003	< 0.0003
1/11/96	<0.05	0.0021	0.0040	< 0.0003	0.00079
1/11/96(*)	< 0.05	0.0003	0.0003	< 0.0003	0.00060

TPHg = Total petroleum hydrocarbons

Results given in milligrams per liter (parts per million)

<= Less than laboratory minimum detection limits

MW1 = Monitoring well number

(*) = Reanalyzed

3.3 Groundwater Gradient

Direction = groundwater flow direction

As directed by the Alameda County Environmental Health Department, groundwater surface measurements have been taken on a monthly basis since April 1995. Elevation data gathered during the monthly measurements indicate the groundwater has been receding since April 1995, and began to recharge by January 1996. The groundwater gradient was approximated from calculations made using surveyed wellhead elevations and locations in combination with depth to groundwater measurements made on November 7, December 6, 1995, and January 11, 1996 (Table 3) (Figures 2, 3 and 4). The data indicate that groundwater flow has been consistently to the southwest ranging from S63°W to S75°W. The gradient also remained consistently near 0.001 ft per ft.

TABLE 3 GROUNDWATER ELEVATION DATA BECK ROOFING FACILITY HAYWARD, CALIFORNIA Page 1 of 3							
Elevation of Depth to Water-level							
Well	Top of Casing		Water		Elevation	Gradient	
Number	· ~	(ft. be	low top of ca	sing)	(ft. above MSL)	and Direction	
8/4/94		_ 					
MW1	58.55	29.96			29.29		
MW2	58.65	29.35			29.30		
MW3	58.52	29.27			29.25		
MW4	. 58.01	28.80		- 46	29.21		
10/25/94				•			
MW1	58.55	30.10			28.45		
MW2	58.65	30.15			28.50	0.0009 ft/ft	
MW3	58.52	30.10			28.42	S22°W	
MW4	58.01	29.60			28.41		
1/20/95							
MW1	58.55	26.57			31.98		
MW2	58.65	26.65			32.00	0.0002 ft/ft	
MW3	58.52	26.54			31.98	S0°W	
MW4	58.01	26.03			31.98		
		C	ontinued on	Next]	Page		
TOC = Top of the well casing (elevation in ft. above mean sea level- AMSL) Gradient = groundwater gradient in ft per ft							

TABLE 3
GROUNDWATER ELEVATION DATA
BECK ROOFING FACILITY
HAYWARD, CALIFORNIA
Page 2 of 3

Well Number 4/11/95 MW1 MW2 MW3 MW4 5/09/95 MW2 MW2 MW2 MW3 MW4	58.55 58.65 58.52 58.01	23.87 23.92 23.87	Depth to Water slow top of casing)	Water-level Elevation (ft. above MSL) 34.68 34.73	Gradient and Direction
Number 4/11/95 MW1 MW2 MW3 MW4 5/09/95 MW2 MW2 MW3	58.55 58.65 58.52 58.01	23.87 23.92 23.87	elow top of casing)	34.68	
MW1 MW2 MW3 MW4 5/09/95 MW2 MW2 MW3	58.65 58.52 58.01	23.92 23.87			
MW2 MW3 MW4 5/09/95 MW2 MW2 MW3	58.65 58.52 58.01	23.92 23.87			
MW3 MW4 5/09/95 MW2 MW2 MW3	58.52 58.01	23.87		34.73	
MW4 5/09/95 MW2 MW2 MW3	58.01			JT.1 J	0.0009 ft/ft
5/09/95 MW2 MW2 MW3		22.20		34.65	S24°W
MW2 MW2 MW3		23.38		34.63	
MW2 MW3					
MW3	58.55	24.65		33.90	
	58.65	24.735		33.915	0.00125ft/ft
NANNA	58.52	24.66		33.86	S65°W
1V1 VV 4	58.01	24.20		33.81	
6/09/95					
MW1	58.55	25.39		33.16	
MW2	58.65	25.47		33.18	0.0008ft/ft
MW3	58.52	25,40		33.12	S59°W
MWd	58.01	24.92		33.10	
7/13/95					
MW1	58.55			INACCESS	IBLE
MW2	58.65	26.0		32.65	
MW3	58.52	25.95		32.57	
MW4	58.01	25.5		32.51	
8/10/95					
MW1	58.55	26.33		32.16	•
MW2	58.65	26.48		32.17	
MW3	58.52	26.43		32.09	
MW4	58.01	25.97		32.04	
9/14/95					
MW1	58.55	26.84		31.71	
MW2	58.65	26.92		31.73	
MW3	58.52	26.87		31.65	
MW4	58.01	26.40		31.61	

Continued on Next Page

TOC = Top of the well casing (elevation in ft. above mean sea level- AMSL)

Gradient = groundwater gradient in ft per ft

Direction = groundwater flow direction

TABLE 3
GROUNDWATER ELEVATION DATA
BECK ROOFING FACILITY
HAYWARD, CALIFORNIA
Page 3 of 3

1		1 450 5 01 5		
	Elevation of	Depth to	Water-level	
Well	Top of Casing	Water	Elevation	Gradient
Number	(ft. above MSL)	(ft. below top of casing)	(ft. above MSL)	and Direction
10/10/95				
MW1	58.55	27.18	31.37	
MW2	58.65	27.27	31.38	
MW3	58.52	27.22	31.30	
MW4	58.01	26.76	31.25	
11/7/95				
MW1	58.55	27.52	31.03	
MW2	58 <i>.</i> 65	27.60	31.05	0.001ft/ft
MW3	58.52	27.55 .	30.97	S65°W
MW4	58.01	27.08	30.93	
12/6/95				
MW1	58 <i>.</i> 55	27.80	30.75	
MW2	58.65	27.88	30.77	0.0017ft/ft
MW3	58.52	27.83	30.65	S75°W
MW4	58.01	27.37	30.64	
1/11/96				
MW1	58.55	[£] 26.76	31.79	
MW2	58.65	26.84	31.81	0.0008 ft/ft
MW3	58.52	26.77 —	31.75	S67°W
MW4	58.01	26.30	31.71	

TOC = Top of the well casing (elevation in ft. above mean sea level- AMSL)

Gradient = groundwater gradient in ft per ft

Direction = groundwater flow direction

3.4 Quality Assurance/Quality Control

All field equipment was cleaned and decontaminated prior to being introduced into the sampling environment. Each sample was collected using a dedicated, disposable bailer. Care was taken to prevent the bailer from becoming contaminated prior to being introduced into the sampling environment.

3.4.1 Laboratory QA/QC

Sparger is certified by the CalEPA Hazardous Waste Testing Laboratory Certification Program to conduct the analyses requested. The methods used by the laboratory are published, approved analytical methods which have built-in QA/QC practices. Other QA/QC practices are part of CalEPA's certification program. The laboratory provided pertinent QA/QC documents pertaining to the analytical protocol. These QA/QC documents include surrogate recovery data and analytical charts including those of the spikes and matrix spike duplicates. Copies of these documents were incorporated into the laboratory reports of analyses (Appendix A).

4.0 CONCLUSIONS AND DISCUSSION

Consistent with previous data, groundwater contamination was not detected in monitoring wells MW1 and MW2, except for 0.00067 ppm xylenes in MW2. Historically, gasoline and the associated volatile constituents have been detected at significant concentrations in MW3, located immediately downgradient, while petroleum contaminants have not been detectable in MW4 located further downgradient. During this sampling event, benzene, toluene, and xylenes were detected in MW4 at concentrations of 0.0003 to 0.0021 ppm, 0.0003 to 0.004 ppm, and 0.0006 to 0.00079 ppm respectively, while no contaminants were detectable in MW3. This data represents a reversal of historic contamination data and may be the result of a clerical error. Monthly groundwater elevation data indicated the groundwater surface was receding between the last quarterly monitoring and the monthly reading in December 1995, and then began to recharge by January 1996.

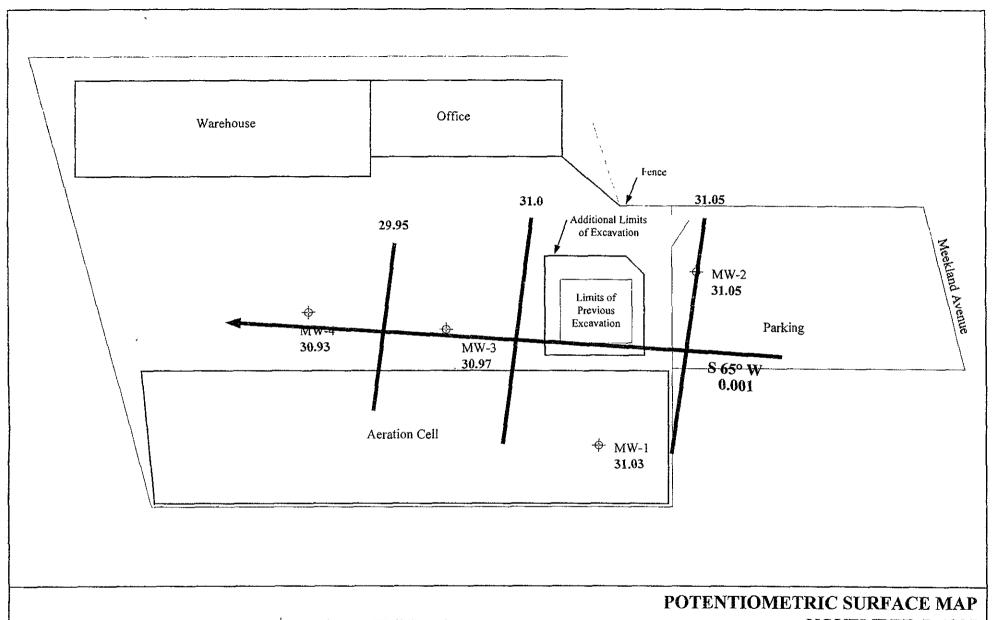
5.0 RECOMMENDATIONS

The present data suggest that there is minimal effect on, and minimal risk to, the public from the groundwater contamination. Further remedial action is being considered. Sampling of all of the onsite monitoring wells should continue on a quarterly basis and monthly groundwater elevation measurements until completion of all remedial action, or until otherwise directed.

6.0 LIMITATIONS

The above conclusions are based on our assessment of conditions indicated to exist as of the dates of our field work. Our assessment included review of previous documents and interviews with state or local regulatory persons familiar with the area. This assessment was conducted in accordance with generally accepted standards of environmental geological practice at the time it was performed. The results of this assessment do not preclude the possibility that substances that are currently, or which in the future may be defined as hazardous, may be present on the property because of activities that we could not identify, or in locations which were not sampled.

Our conclusions are based on groundwater sample analyses representative of contaminant concentrations at the locations sampled. These results are considered indicative of site conditions, but such conditions may vary away from the points sampled. Further investigation, including additional subsurface exploration and laboratory testing of soil and groundwater samples can reduce the uncertainties inherent in this type of limited environmental assessment. No soil engineering or geotechnical references are made, nor should they be inferred.





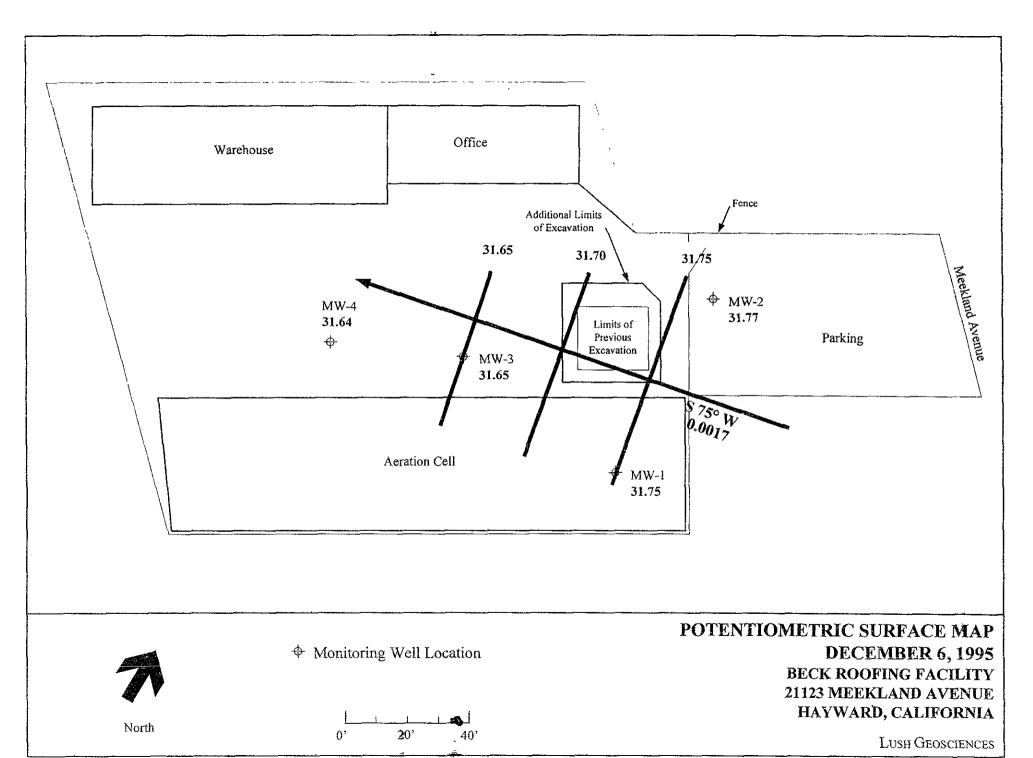
North

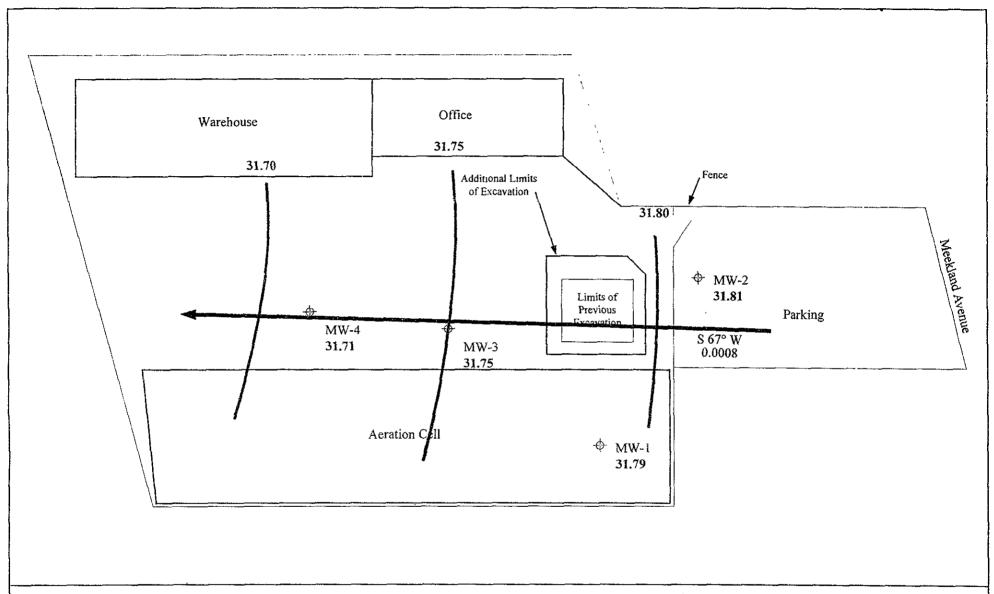
Monitoring Well Location

0' 20' 40'

OTENTIOMETRIC SURFACE MAP NOVEMBER 7, 1995 BECK ROOFING FACILITY 21123 MEEKLAND AVENUE HAYWARD, CALIFORNIA

Lush Geosciences

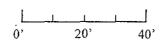






North

Monitoring Well Location



POTENTIOMETRIC SURFACE MAP JANUARY 11, 1996 BECK ROOFING FACILITY 21123 MEEKLAND AVENUE HAYWARD, CALIFORNIA

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8020/8015 Modified Analysis Report

Attention:

Mr. Andrew Lush

Lush Geociences

3560 Business Dr., Suite 120

Sacramento, CA 95820

Project #:

423-001

Client ID:

MW-1

Date Sampled:

Date Received:

Jan 11, 1996 Jan 12, 1996

Date Analyzed:

Jan 19, 1996

Imvoice #:

6157

Project Name:

Beck

LAB ID:

ST96-01-1217A

Matrix:	Water		Dilution: 1: 1 Detection	
Name	A	Amount	Limit	Units
Benzene		ND ·	0.3	ug/L
Toluene		ND	0.3	ug/L
Ethylbenzene		ND	0.3	ug/L
Xylenes		ND	0.3	ug/L
TPHgas		ND	50	ug/L
Surrogate % Re	covery of Trifluorotoluene =		81%	

ppb = parts per billion = ug/L = micrograms per Liter

ppm= parts per million = ug/mL = micrograms per milliliter

ND = Not Detected Compound(s) may be present at concentrations below the detection limit

* ^5 }

R. L. James, Principal Chemist

Jan 22, 1996

Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY (Certification No 1614)



8020/8015 Modified Analysis Report

Attention: Mr. And

Mr. Andrew Lush

Lush Geociences

3560 Business Dr., Suite 120

Sacramento, CA 95820

Project #:

Matrix:

423-001

Client ID:

MW-2

Water

. . .

Project Name:

Date Sampled:

Date Received:

Date Analyzed: Imvoice #:

Beck

1

6157

LAB ID:

80%

ST96-01-1218A

Jan 11, 1996

Jan 12, 1996

Jan 19, 1996

Dilution: 1:

Detection Limit Units Amount Name ND 0,3 ug/L Benzene ND 0.3 ug/L Toluene ND 0.3 ug/L Ethylbenzene 0.67 0.3 ug/L **Xylenes** 50 ND ug/L **TPHgas**

ppb = parts per billion = ugiL = micrograms per Liter

i pm= parts per million = vg/mL = micrograms per milliliter

Surrogate % Recovery of Trifluorotoluene =

1/D - Not Detected Compound(s) may be present at concentrations below the detection limit

R. L. James, Principal Chemist

Jan 22, 1996

Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY

(Certification No. 1614)



8020/8015 Modified Analysis Report

Attention:	Mr. Andrew Lush Lush Geociences 3560 Business Dr., Suite 1 Sacramento, CA 95820	20	Date Sampled: Date Received: Date Analyzed: Imvoice #:	Jan 11, 1996 Jan 12, 1996 Jan 19, 1996 6157
Project #	423-001		Project Name:	Beck
Client ID:	MW-3		LAB ID:	ST96-01-1219A
Matrix:	Water		Dilution: 1: Detection	1
Name	•	Amount	Limit	Units
Benzene		ND	0.3	ug/L
Toluene		ND	0.3	ug/L
Ethylbenzene		ND	0.3	ug/L
Xylenes		ND	0.3	ug/L
TPHgas		ND	50	ug/L
Surrogate % Re	covery of Trifluorotoluene =		84%	

ppb = parts per hillion - ug/L = micrograms per Liter

ppm= parts per million = ug/mL = micrograms per milliliter

11D = Not Detected | Compound(s) may be present at concentrations below the detection limit

R. L. James, Principal Chemist

Jan 22, 1996 Date Reported

SPARGER TECHNOLOGY ANALYTICAL LABORATORY, INC. IS CERTIFIED BY THE STATE OF CALIFORNIA CEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY

(Certification No. 1614)

8020/8015 Modified Analysis Report

Attention:	Mr. Andrew Lush Lush Geociences 3560 Business Dr., Suite 12 Sacramento, CA 95820	20	Date Sampled: Date Received: Date Analyzed: Imvoice #:	Jan 11, 1996 Jan 12, 1996 Jan 19, 1996 6157
Project#:	423-001		Project Name:	Beck
Client ID:	MVV-4		LAB ID:	ST96-01-1220A
Matrix:	Water		Dilution: 1:	1
Name		Amount	Detection Limit	Units
Benzene		2.1	0.3	ug/L
Toluene		4.0	0.3	ug/L
Ethylbenzene		ND	0.3	ug/L
Xylenes		0.79	0.3	ug/L
TPHgas		ND	50	ug/L
Surrogate % Re	ecovery of Trifluorotoluene =	80%		

ppb = patts per billion = ug/L = micrograms per Liter

ppm= putt- per million = ug/mL = micrograms per milliliter

ND = Not D | tected | Compound(s) may be present at concentrations below the detection limit

R. L. James, Principal Chemist

Jan 22, 1996

Date Reported



8020 Modified Laboratory Control Spike (LCS) & Laboratory Control Spike Duplicate (LCSD) BTEX Analysis Report

Attention:

Mr. Andrew Lush

Lush Geosciences

3560 Business Dr., Suite 120

Sacramento, CA 95820

Project ID:

423-001

Client ID:

LCS/LCSD

)1 Project Name:

LAB ID:

Date Sampled:

Date Received:

Date Analyzed:

Invoice #:

ST96-01-019 LCS

ST96-01-019 LCSD

Jan 11, 1996

Jan 12, 1996

Jan 19, 1996

6157

Beck

Matrix:

Water

Dilution:

Name	Conc. Spike Added	Sample Result	LCS Result	LCSD Result	Units	LCS % Recovery	LCSD % Recovery	% RPD Recovery
Benzene	30 ppb	ND	28	32	ug/L	93%	107%	13%
Toluene	30 ppb	ND	31	32	ug/L	103%	107%	3%
Ethylbenzene	30 ppb	ND	36	37	ug/L	120%	123%	3%
Xylenes	30 ppb	ND	37	38	ug/L	123%	127%	3%
Surrogate % Recovery of Triffuorotoluene =			79%	LCS	78%	6 LCSD		

ppb = parts per billion = ug/L = micrograms per Liter

ppm= parts per million = ug/mit = micrograms per milliliter

MD - Not Defected - Compound(s) may be present at concentrations below the detection limit

R. L. James, Principal Chemist

Jan 22, 1996

Date Reported



8020 Modified Matrix Spike (MS) & Matrix Spike Duplicate (MSD) **BTEX Analysis Report**

Attention:

Mr. Andrew Lush

Lush Geosciences

3560 Business Dr., Suite 120 Sacramento, CA 95820

Project ID:

423-001

Client ID:

MS/MSD

Matrix:

LAB ID:

Invoice #:

Date Sampled:

Date Received:

Date Analyzed:

Project Name:

ST96-01-1217 MS

Jan 11, 1996

Jan 12, 1996

Jan 19, 1996

6157

Beck

ST96-01-1217 MSD

Dilution: Water

Name	Conc. Spike Added	Sample Result	MS Result	MSD Result	Units	MS % Recovery	MSD % Recovery	% RPD Recovery
Benzene	30 ppb	ND	31	32	ug/L	103%	107%	3%
Toluene	30 ppb	ND	31	34	ug/L	103%	113%	9%
Ethylbenzene	30 ppb	ND	35	36	ug/L	117%	120%	3%
Xylenes	30 ppb	ND	37	38	ug/L	123%	127%	3%

Surrogate % Recovery of Trifluorotoluene =

81% MS

81% MSD

ppb = parts per billion = ug/L = micrograms per liter

ppm= parts per million = ug/ml = micrograms per milliliter

ND = Not Detected. Compound(s) may be present at concentrations below the detection limit

R. E. James, Principal Chemist

Jan 22, 1996

Date Reported

LUSH GEOSCIENCES

GEOLOGICAL AND ENVIRONMENTAL SERVICES OF COTTON

SS FED 13 PH 2: 11

February 9, 1996 423-001

Ms. Juliet Shin
Alameda County Health Services
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: Transmittal of Quarterly Monitoring Report

Beck Roofing in Hayward, California

Dear Ms. Shin:

Enclosed, please find a copy of the Quarterly Monitoring Report for Beck Roofing in Hayward, California. Please call our office if you have any questions regarding this report or any other aspect of this project.

Sincerely,

LUSH GEOSCIENCES

Andrew P. Lush

President

Enclosure