2101 Webster Street
12th Floor
Oakland, CA 94612
(510) 663-4100 • FAX (510) 663-4141

GEOMATRIX

July 19, 2001
Project No. 7315.000.0

JUL 2 3 2001

Mr. Don Hwang
Alameda County Environmental Health Division
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Local Case No. 3615—Former Gulf Service Station #0006
460 Grand Avenue, Oakland, California

Dear Mr. Hwang:

This letter report presents the results of soil sampling performed by Geomatrix Consultants, Inc. (Geomatrix), on behalf of John C. Gibson, receiver for the Falaschi Brothers, at 460 Grand Avenue, Oakland, California (Figure 1). The objective of this sampling was to evaluate current conditions in soil at the location with an elevated concentration of benzene detected in 1992 (13 milligrams per kilogram [mg/kg], 5 feet below ground surface [bgs] at former Well C-2, Figure 2). The results will be used to re-evaluate the need for institutional controls for future residential land use, as required by the Case Closure Summary (Alameda County-HazMat, November 19, 1996). The Case Closure Summary includes a property use restriction, as follows:

> Residential site development would be acceptable, provided that either 1) the development should include a 15' setback distance from Grand Ave., or 2) soil will be excavated within the 15' setback zone, soil samples collected under the purview of this Agency, and laboratory analysis indicates the samples are either non-detect or within acceptable concentrations (as per additional calculations and another revised Risk Evaluation).

Geomatrix advanced five shallow soil borings (B-1 through B-5; Figure 2) on June 29, 2001, using hand auger equipment. All augering and soil sampling equipment was cleaned prior to use and between each boring. Soil samples were collected at approximately 2 and 4.5 feet bgs and retained in 2.5-inch diameter, 6-inch long brass tubes. Teflon sheets were placed on the ends of the tubes, which were then capped, labeled, sealed in plastic bags, and stored in an ice-cooled chest. Following collection of the soil samples, excess soil cuttings were placed back in the borings.

The samples were submitted to STL Chromalab, of Pleasanton, California, a California-certified analytical laboratory, under Geomatrix chain-of-custody procedures. Copies of the

laboratory report and the chain of custody are included in Attachment A. The chemical analytical program included the following methods:

- Total petroleum hydrocarbons quantified as gasoline (TPHg) by U.S. EPA Method 8015; and
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by U.S. EPA Method 8020 (soil) or 8021B (water).

Chemical analyses were requested for the two samples collected at B-1, immediately adjacent to former Well C-2. The remaining samples were placed on hold, pending results for the samples from B-1.

The historical analytical data for samples within the vadose zone (0 to 5 feet bgs—according to the Case Closure Summary, groundwater is approximately 5 feet bgs) are summarized in Table 1 and Figure 2, along with the results from the recent boring B-1. (Comparison of the B-1 benzene data (<0.0050 mg/kg at 4.3 feet bgs) with the 1992 former Well C-2 data (13 mg/kg at 5 feet bgs) indicate that benzene in soil has biodegraded over time at that location. Therefore, the 1992 benzene concentration of 13 mg/kg at 5 feet bgs was not included in the data set used for comparison to the residential RBSLs.[1]

As shown on Table 1, the average concentration of BTEX within the vadose zone is less than the respective residential RBSLs. In addition, the results of resampling near former Well C-2 indicate that naturally occurring biodegradation reduced the benzene concentration from 13 mg/kg in 1992 to less than the laboratory reporting limit at that location in 2001. It is likely that BTEX detected in 1992 and 1994 at other locations at the Site have also been significantly reduced over time. As a result, the setback included in the 1996 Case Closure Summary does not appear to be warranted at this time based on current site conditions.

The 1996 Case Closure Summary includes a clause that states "[r]esidential development is acceptable, providing that...soil samples are collected under the purview of this Agency, and laboratory analysis indicates the samples an either non-detect or within acceptable concentrations." Therefore, it is requested that the Case Closure Summary be amended to allow unrestricted residential land use.

[1] Risk-Based Screening Levels, Regional Water Quality Control Board, August 2000.

We appreciate your prompt attention to this request. Please call me at (510) 663-4226 if you have any questions or need additional information.

Sincerely,
GEOMATRIX CONSULTANTS, INC.

Margaret K. (Peggy) Peischl, P.E.
Senior Engineer

The following complete this letter report:

Table 1	Summary of Analytical Data
Figure 1	Vicinity Map
Figure 2	Site Plan
Attachment A	Chemical Analytical Laboratory Report

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cc: Roger D. Brewer, RWQCB
Jack C. Gibson, Esq.

GEOMATRIX

TABLE 1

SUMMARY OF ANALYTICAL RESULTS—SOIL SAMPLES

Former Gulf Service Station #0006
460 Grand Avenue
Oakland, California

Results reported in milligrams per kilogram (mg/kg)

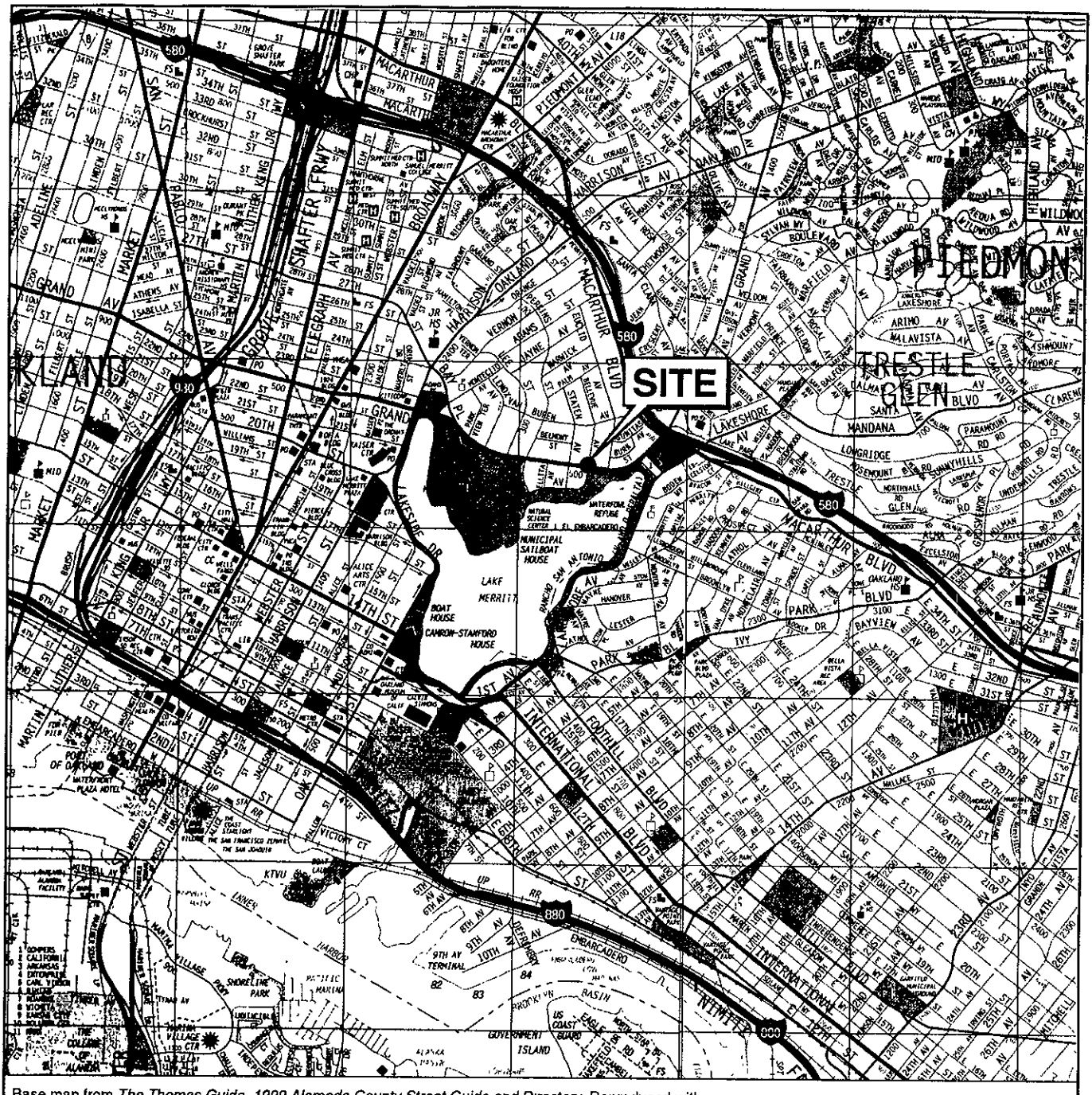
Date	Sample ID	Sample Depth (feet bgs)	TPHg	Benzene	Toluene	Ethylbenzene	Total Xylenes
December-92	C-2	5	**2,300** [1]	**13** [1]	**80** [1]	**83** [1]	**440** [1]
December-92	C-1	5	**8.6**	<0.0050	<0.0050	**0.024**	**0.012**
December-92	C-3	5	**0.008**	**0.008**	<0.0050	**0.012**	<0.0050
January-94	IX-11	5	**3**	**0.6**	**0.24**	**0.097**	**0.5**
January-94	IX-15	5	**9**	**1.2**	**1.2**	**0.13**	**0.68**
January-94	IX-18	4	**15**	**0.18**	**0.49**	**0.52**	**3.1**
January-94	IX-20	5	<1.0 [2]	<0.0050	**0.006**	<0.0050	**0.008**
January-94	WX-3	3	**30**	<0.0050	<0.0050	<0.0050	**0.95**
January-94	WO-5	5	<1.0	<0.0050	<0.0050	<0.0050	**0.005**
January-94	WO-6	5	**5**	<0.0050	<0.0050	<0.0050	**0.011**
January-94	WO-7	5	**16**	<0.0050	**0.008**	<0.0050	**0.066**
January-94	WO-8	4.5	**10**	**0.005**	**0.007**	**0.007**	**0.031**
January-94	WO-10	5	**18**	<0.0050	<0.0050	**0.084**	**0.36**
January-94	WO-11	4.5	<1.0	<0.0050	<0.0050	<0.0050	**0.006**
June-01	B-1-2.0	2.0	<1.0	<0.0050	**0.014**	<0.0050	<0.0050
June-01	B-1-4.3	4.3	<1.0	<0.0050	**0.032**	<0.0050	<0.0050
Sample Mean			8	0.13	0.13	0.06	0.38
RBSLs[3]			---	0.18	8.4	24	1.0
Region IX PRGs[4]			---	0.65	520	230	210

Notes:

1. These data are superceded by the new data collected on June 29, 2001, at boring B-1.
2. "<" indicates compound not detected above the laboratory reporting limit shown.
3. Risk-Based Screening Levels, RWQCB (August 2000)—Residential.
4. U.S. EPA Region IX Preliminary Remediation Goals (November 1, 2000)—Residential.

Abbreviations:

TPHg = total petroleum hydrocarbons as gasoline
bgs = below ground surface



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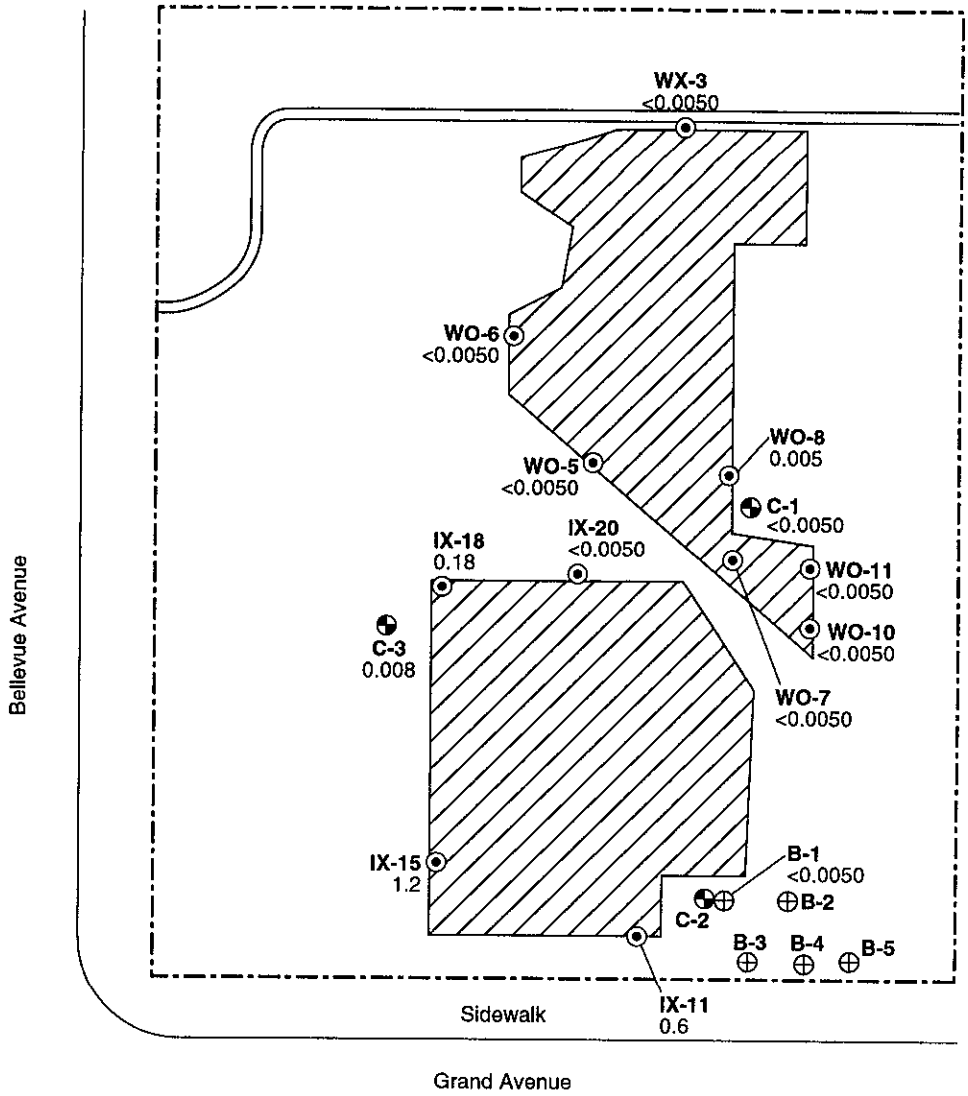
GEOMATRIX

SITE LOCATION MAP
460 Grand Avenue
Oakland, California

Project No.
7315.000

Figure
1



EXPLANATION

C-2	Former monitoring well location
IX-11	1994 confirmation sample location
B-1	2001 shallow soil boring location
0.6	Benzene concentration in milligrams per kilogram
<0.0050	Benzene not detected above laboratory reporting limit indicated in milligrams per kilogram
	Excavation limits

0 20 Feet

Source: Touchstone Developments Environmental Management, 3/13/1994

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GEOMATRIX

SITE PLAN
460 Grand Avenue
Oakland, California

Project No.
7315.000

Figure
2

Geomatrix Consultants
2101 Webster Street, 12th Floor
Oakland, CA 94612

Attn.: Peggy Peischl

Attached is our report for your samples received on Friday June 29, 2001
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 August 13, 2001 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: asalimpour@chromalab.com

Sincerely,

Afsaneh Salimpour

Afsaneh Salimpour

Gas/BTEX

Geomatrix Consultants

2101 Webster Street, 12th Floor
Oakland, CA 94612

Attn: Peggy Peischl

Phone: (510) 663-4226 Fax: (510) 663-4141

Project #: 7315.000

Project:

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
B-1-2.0	Soil	06/29/2001 10:54	1
B-1-4.3	Soil	06/29/2001 13:05	2

To: **Geomatrix Consultants**

Attn.: Peggy Peischl

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**B-1-2.0**	Lab Sample ID:	**2001-06-0570-001**
Project:	7315.000	Received:	06/29/2001 16:07
		Extracted:	07/02/2001 17:54
Sampled:	06/29/2001 10:54	QC-Batch:	2001/07/02-01.02
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	07/02/2001 17:54	
Benzene	ND	0.0050	mg/Kg	1.00	07/02/2001 17:54	
Toluene	0.014	0.0050	mg/Kg	1.00	07/02/2001 17:54	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	07/02/2001 17:54	
Xylene(s)	ND	0.0050	mg/Kg	1.00	07/02/2001 17:54	
Surrogate(s)						
Trifluorotoluene	65.0	53-125	%	1.00	07/02/2001 17:54	
Trifluorotoluene-FID	56.1	53-125	%	1.00	07/02/2001 17:54	

To: **Geomatrix Consultants**

Attn.: Peggy Peischl

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**B-1-4.3**	Lab Sample ID:	**2001-06-0570-002**
Project:	7315.000	Received:	06/29/2001 16:07
		Extracted:	07/02/2001 20:35
Sampled:	06/29/2001 13:05	QC-Batch:	2001/07/02-01.02
Matrix:	Soil		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	07/02/2001 20:35	
Benzene	ND	0.0050	mg/Kg	1.00	07/02/2001 20:35	
Toluene	0.032	0.0050	mg/Kg	1.00	07/02/2001 20:35	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	07/02/2001 20:35	
Xylene(s)	ND	0.0050	mg/Kg	1.00	07/02/2001 20:35	
Surrogate(s)						
Trifluorotoluene	64.6	53-125	%	1.00	07/02/2001 20:35	
Trifluorotoluene-FID	58.8	53-125	%	1.00	07/02/2001 20:35	

To: **Geomatrix Consultants**
Attn.: Peggy Peischl

Test Method: 8015M
8020
Prep Method: 5030

Batch QC Report
Gas/BTEX

Method Blank | **Soil** | **QC Batch # 2001/07/02-01.02**

MB: 2001/07/02-01.02-001 | Date Extracted: 07/02/2001 09:32

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	07/02/2001 09:32	
Benzene	ND	0.0050	mg/Kg	07/02/2001 09:32	
Toluene	ND	0.0050	mg/Kg	07/02/2001 09:32	
Ethyl benzene	ND	0.0050	mg/Kg	07/02/2001 09:32	
Xylene(s)	ND	0.0050	mg/Kg	07/02/2001 09:32	
Surrogate(s)					
Trifluorotoluene	113.4	53-125	%	07/02/2001 09:32	
4-Bromofluorobenzene-FID	94.2	58-124	%	07/02/2001 09:32	

To: **Geomatrix Consultants**

Attn: Peggy Peischl

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2001/07/02-01.02**

LCS: 2001/07/02-01.02-002 Extracted: 07/02/2001 10:04 Analyzed 07/02/2001 10:04

LCSD: 2001/07/02-01.02-003 Extracted: 07/02/2001 10:36 Analyzed 07/02/2001 10:36

Compound	Conc. [mg/Kg]		Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	0.463	0.446	0.500	0.500	92.6	89.2	3.7	75-125	35		
Benzene	0.0977	0.0979	0.1000	0.1000	97.7	97.9	0.2	77-123	35		
Toluene	0.100	0.100	0.1000	0.1000	100.0	100.0	0.0	78-122	35		
Ethyl benzene	0.0968	0.0975	0.1000	0.1000	96.8	97.5	0.7	70-130	35		
Xylene(s)	0.278	0.281	0.300	0.300	92.7	93.7	1.1	75-125	35		
Surrogate(s)											
Trifluorotoluene	534	546	500	500	106.8	109.2		53-125			
4-Bromofluorobenzene-FI	547	530	500	500	109.4	106.0		58-124			

STL ChromaLab

Environmental Services (CA 1094)

Submission #: 2001-06-0570

To: **Geomatrix Consultants**

Test Method: 8015M
8020

Attn.: Peggy Peischl

Prep Method: 5030

Batch QC Report

Gas/BTEX

Matrix Spike (MS / MSD) **Soil** **QC Batch # 2001/07/02-01.02**

Sample ID: **B-1-2.0** Lab Sample ID: 2001-06-0570-001

MS: 2001/07/02-01.02-019 Extracted: 07/02/2001 19:31 Analyzed: 07/02/2001 19:31 Dilution: 1.0

MSD: 2001/07/02-01.02-020 Extracted: 07/02/2001 20:03 Analyzed: 07/02/2001 20:03 Dilution: 1.0

Compound	Conc. [mg/Kg]			Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Gasoline	0.283	0.283	ND	0.499	0.496	56.7	57.1	0.7	65-135	35	mso	mso
Surrogate(s)												
4-Bromofluorobenzene-F	294	295		500	500	58.8	59.0		58-124			

STL ChromaLab

Environmental Services (CA 1094)

Submission #: 2001-06-0570

To: **Geomatrix Consultants**

Attn.: Peggy Peischl

Test Method: 8020

Prep Method: 5030

Batch QC Report

Gas/BTEX

Matrix Spike (MS / MSD) **Soil** **QC Batch # 2001/07/02-01.02**

Sample ID: **B-1-2.0** Lab Sample ID: 2001-06-0570-001

MS: 2001/07/02-01.02-017 Extracted: 07/02/2001 18:26 Analyzed: 07/02/2001 18:26 Dilution: 1.0

MSD: 2001/07/02-01.02-018 Extracted: 07/02/2001 18:58 Analyzed: 07/02/2001 18:58 Dilution: 1.0

Compound	Conc. [mg/Kg]			Exp.Conc. [mg/Kg]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	MS	MSD	Sample	MS	MSD	MS	MSD	[%]	Recovery	RPD	MS	MSD
Benzene	0.0606	0.0583	ND	0.0996	0.0994	60.8	58.7	3.5	65-135	35	mso	mso
Toluene	0.0820	0.0798	0.0136	0.0996	0.0994	68.7	66.6	3.1	65-135	35		
Ethyl benzene	0.0625	0.0571	ND	0.0996	0.0994	62.8	57.4	9.0	65-135	35	mso	mso
Xylene(s)	0.185	0.170	ND	.300	0.298	61.7	57.0	7.9	65-135	35	mso	mso
Surrogate(s)												
Trifluorotoluene	395	376		500	500	79.0	75.2		53-125			

2001-06-0570 60169

CHAIN-OF-CUSTODY RECORD

Nº 13663 | Date: 6/29/01 | Page 1 of 1

Project No.: 7315.000

Samplers (Signatures)

Date	Time	Sample Number
6/29/01	1054	B-1-2.0
	1305	B-1-4.3
	1130	B-2-2.0
	1140	B-2-5.0
	1154	B-3-2.0
	1310	B-3-4.4
	1237	B-4-2.0
	1300	B-4-5.0
	1344	B-5-2.0
↓	1353	B-5-5.0

ANALYSES

EPA Method 8010	EPA Method 8020	EPA Method 8020 (BTEX only)	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH's/BTEX	HOLD
							X	
							X	X
								X
								X
								X
								X
								X
								X
								X
								X
								X

REMARKS

Cooled	Soil (S), Water (W), or Vapor (V)	Acidified	Number of containers
Y	S	N	1

Additional Comments

Turnaround time: STANDARD

Results to: Reggy Peischl

Total No of containers: 10

Relinquished by (signature):	Date	Relinquished by (signature):	Date	Relinquished by (signature):	Date:
	6/29/01				
Printed Name: BRYAN SEARS	Time: 1450	Printed Name:	Time:	Printed Name:	Time:
Company: Geomatrix		Company:		Company:	
Received by (signature):	Date: 6/29/01	Received by (signature)	Date	Received by (signature): Denise Harrington	Date: 6/29/01
Printed Name:	Time: 1455	Printed Name:	Time:	Printed Name: D Harrington	Time: 1607
Company: STL-CL		Company		Company STL-CL	

Method of Shipment: Lab Courier

Laboratory Comments and Log No.:

Cooler rec'd sealed - DSH

2.4°C

Geomatrix Consultants
2101 Webster Street
12th Floor
Oakland, CA 94612
510 663 4100

Forms(PF) 012 (Revised 4/00)