



Technology, Engineering & Construction, Inc.

35 South Linden Avenue • South San Francisco, CA 94080-6407
Tel: (650) 952-5551 • Fax: (650) 952-7631 • Contractor's Lic. #762034

RO/93

Be sure ABCA also evaluates residential scenario

November 20, 2001

Ms. Eva Chu
Hazardous Materials Specialist
Alameda County Health Agency
Division of Environmental Protection
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

NOV 27 2001

Subject: Quarterly Monitoring Report for September 2001

**Site: Former Olympian Gasoline Station
1435 Webster Street
Alameda, California**

Dear Ms. Chu:

TEC Accutite is pleased to submit this quarterly monitoring report for the above referenced site. On September 28, 2001, TEC Accutite sampled six monitoring wells (MW-1 through MW-6). The results of this quarterly monitoring episode are presented in the following report.

Thank you for your cooperation. If you have any questions, please call me at (650) 952-5551, Ext. 208.

Sincerely,
TEC Accutite

David Gregory
Project Manager

cc: Mr. Dan Koch, Olympian, 260 Michelle Court, South San Francisco, CA 94080
Mr. David Harris, Esq., Trump, Alioto, Trump & Prescott, LLP, 2280 Union Street, San Francisco, CA 94123
Mr. Jeff Farrar, P.O. Box 1701, Chico, CA 95927
Mr. Thomas Ballard, GHH Engineering, Inc., 8084 Old Auburn Road, Citrus Height, CA 95610



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**THIRD QUARTER
GROUNDWATER MONITORING REPORT
SEPTEMBER 2001**

**FORMER OLYMPIAN SERVICE STATION
1435 WEBSTER STREET
ALAMEDA, CA**

**PREPARED FOR:
OLYMPIAN
260 MICHELLE COURT
SOUTH SAN FRANCISCO, CA**

**PREPARED BY:
TEC ACCUTITE
35 SOUTH LINDEN AVENUE
SOUTH SAN FRANCISCO, CA 94080**

**SAMPLING DATE
SEPTEMBER 28, 2001**

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- A GROUNDWATER SAMPLING FORMS
- B LABORATORY REPORT

1.0 INTRODUCTION

On behalf of Olympian, TEC Accutite was contracted to sample six monitoring wells at the former Olympian Station, located at 1435 Webster Street, Alameda, California (Figure 1). This report summarizes the third quarter 2001 groundwater monitoring event.

2.0 BACKGROUND

The site is located on the corner of Webster Street and Taylor Avenue in Alameda, CA. Prior to 1989, the site was occupied by an Olympian Service Station. Station facilities consisted of two 10,000-gallon gasoline and one 7,500-gallon diesel underground storage tanks (USTs), two dispenser islands and a 500-gallon waste oil UST (Figure 2).

The surrounding topography is flat and the site is approximately 20 feet above mean sea level. The site is situated in a mixed commercial and residential area and is currently leased by the City of Alameda and operated as a metered parking lot.

In October 1988, CHIPS Environmental Consultants, Inc. performed soil gas analysis at the subject site. High soil gas readings were found on the eastern side of one of the pump islands, between the pump islands, and from backfill between the gasoline storage tanks.

In September 1989, TEC Accutite removed the following USTs:

- Two 10,000-gallon gasoline USTs
- One 7,500-gallon diesel UST
- One 500-gallon waste oil UST

Analysis of soil samples collected during removal of the USTs detected hydrocarbons at a maximum concentration of 220 parts per million (ppm) Total Petroleum Hydrocarbons as gasoline (TPHg), 430 ppm Total Petroleum Hydrocarbons as diesel (TPHd), and 650 ppm Total Recoverable Petroleum Hydrocarbons as Oil and Grease (TRPH).

In January 1991, remedial excavation of the hydrocarbon impacted soil was conducted by AAA Tank Removal / Forcade Excavations Services. Approximately 950 cubic yards of soil were removed from the former location of the USTs. This soil was bioremediated onsite and returned to the former excavation.

In January 1993, Uriah Environmental Services, Inc. installed three monitoring wells onsite (MW-1 through MW-3). Soil samples collected during the well installation contained no detectable concentrations of petroleum hydrocarbons. Bi-annual groundwater monitoring was initiated. Dissolved phase hydrocarbons have been detected in all wells at varying concentrations.

In February 1999, TEC Accutite advanced four borings on and offsite (B1 through B4) to determine the extent of hydrocarbon impact to soil and groundwater. The soil analytical results detected non-significant concentrations of TPHg, benzene, toluene, ethyl-benzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE). The groundwater samples detected hydrocarbon concentrations up to 6,000 parts per billion (ppb) MTBE and 38,000 ppb benzene.

In December 1999, TEC Accutite installed three additional wells MW-4 through MW-6 to define the dissolved phase hydrocarbons and assess plume stability. Analysis of soil samples detected hydrocarbon concentrations of 1,100 ppm TPHg, 200 ppm TPHd and 3.4 ppm benzene from soil collected at 9.5 feet below grade (fbg) in well MW-5. No hydrocarbons were detected in the soil samples collected during the installation of wells MW-4 and MW-6. Groundwater sampling from wells MW-6 and MW-3 defined the dissolved phase hydrocarbon plume upgradient of the former dispenser islands and cross-gradient of the former USTs.

In November 2000, TEC Accutite completed a site conceptual model. Based on historical quarterly monitoring data, it was determined that the contaminant plume is unstable and is undefined downgradient. An assessment of hydrological conditions, proximity to sensitive receptors and current groundwater usage, suggest that MTBE in groundwater is not the primary chemical of concern. Given the shallow groundwater elevation (9 fbg), estimated high permeability of soils beneath the site, the potential for benzene vapor phase migration from hydrocarbon affected groundwater to indoor and ambient air was identified as an exposure pathway requiring future evaluation.

In June 2001, TEC Accutite drilled additional four borings to assess the extent of the plume and sampled all wells. Soil samples were collected approximately 9 fbg within the capillary fringe from soil borings B1 through B4. No petroleum hydrocarbons were detected in the soil above laboratory reporting limits. The greatest concentration of dissolved phase petroleum hydrocarbons were detected in monitoring well MW-1 at 18,000 ppb TPHg, 1,200 ppb benzene, and 1,500 ppb MTBE. Dissolved phase concentrations of TPHg, benzene, and MTBE in surrounding monitoring wells were either non-detect or insignificant.

As a part of an ongoing plume assessment, this report details the third quarter groundwater sampling episode for 2001.

3.0 GROUNDWATER FLOW DIRECTION

On September 28, 2001, TEC Accutite measured the groundwater elevations in all six wells prior to sampling. The reference mark considered as a base for calculating the groundwater elevations was a fire hydrant, located on the sidewalk of Webster Street (Figure 2).

The calculated groundwater flow direction was to the south to southwest (Figure 2) at a gradient of 0.002. Table 1 below summarizes the elevation data:

TABLE 1. Elevation Data			
Well Identification	Elevation of Casing in ft	Depth to Ground-Water in ft	Ground Water Elevation in ft
MW-1	19.53	11.06	8.47
MW-2	19.80	11.40	8.40
MW-3	19.79	11.34	8.45
MW-4	19.30	10.98	8.32
MW-5	18.99	10.39	8.60
MW-6	20.27	11.70	8.57



4.0 SAMPLING

On September 28, 2001, TEC Accutite sampled all six monitoring wells MW-1 through MW-6. All wells were purged prior to sampling. The sampling logs are included in Attachment A. The groundwater samples were collected with disposable bailers and transferred into sampling vials and containers. The samples were transported in a cooler at approximately 4°C. A completed chain of custody accompanied the samples to North State Environmental Laboratory.

Groundwater samples were analyzed for:

- TPHg (USEPA Method 8015)
- BTEX, MTBE (USA EPA Method 8020)
- Positive MTBE detection's were confirmed by USEPA Method 8260

As discussed with Alameda County Environmental Health Services Agency (ACEHSA), Analysis for TPHd was discontinued because in the past sampling episodes the resulting chromatograms did not match diesel pattern.

The laboratory results are included in Attachment B. A tabulated summary of the analytical findings to date is presented below (Table 2).

TABLE 2. Cumulative Groundwater Analytical Results										
Sample ID	Date Of Sampling	Depth to Water	TPHd (ppb)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TRPH (ppm)
MW-1	06/03/93	NA ⁽¹⁾	NA	NA	NA	NA	NA	NA	NA	NA
	09/14/94	11.46	<50	14,000	44	28	25	50	NA	0.8
	12/30/94	9.22	<50	4,000	12	9	6.8	30	NA	<0.5
	03/26/95	6.76	<50	1,000	21	10	7.1	25	NA	2.1
	07/09/95	8.92	<50	16,000	57	28	25	53	NA	NA
	07/31/98	8.30	1,700	4,700	1,300	48	140	150	6,600	<5
	02/11/99	7.91	2000	25,000	18,000	1,600	1,400	500	28,000	NA
	06/23/99	9.03	4,900	42,000	11,000	1,100	1,500	2,300	15,000	NA
	12/06/99	10.86	4,000	44,000	8,900	3,400	1,900	5,100	11,000	NA
	03/16/00	6.93	700	5,100	2,400	100	280	460	2,700 ⁽³⁾	NA
	06/13/00	8.73	2,800	17,000	5,300	260	720	790	7,000 ⁽³⁾	NA
	09/29/00	10.18	5,200*	50,000	11,000	2,900	1,900	4,600	7,200 ⁽³⁾	NA
	03/22/01	8.24	1,500*	8,600	2,600	750	250	950	3,200 ⁽³⁾	NA
	09/28/01	11.06	NA	48,000	5,200	6,100	2,200	8,100	4,000 ⁽³⁾	NA
MW-2	06/03/93	9.54	<50	<50	5.8	<0.5	<0.5	<0.5	NA	<0.5
	09/14/94	11.82	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5
	12/30/94	9.46	<50	160	1.4	1.4	0.8	5.0	NA	<0.5
	03/26/95	6.82	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5
	07/09/95	9.22	NA	NA	NA	NA	NA	NA	NA	NA
	07/31/98	8.56	220	<50	<0.5	<0.5	<0.5	<0.5	73	<5
	02/11/99	8.12	<50	<50	<0.5	<0.5	<0.5	<0.5	75	NA
	06/23/99	9.33	420	<50	<0.5	<0.5	<0.5	<0.5	96	NA
	12/06/99	11.20	<110	300	28	45	6	37	210	NA
	03/16/00	6.88	<50	<50	1.0	<0.5	0.5	1.0	3.0	NA
	06/13/00	8.99	<50	68	0.8	<0.5	<0.5	<0.5	38	NA
	09/29/00	10.40	<50	67	0.8	0.5	<0.5	1	86 ⁽³⁾	NA
	03/22/01	8.46	<50	<50	1	0.5	<0.5	1	14	NA
	09/28/01	11.40	NA	300	4	6	3	10	130	NA



Table 2. Cont.

Sample ID	Date Of Sampling	Depth to Water	TPHd (ppb)	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TRPH (ppm)
MW-3	06/03/93	9.80	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5
	09/14/94	12.19	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5
	12/30/94	9.72	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5
	03/26/95	6.88	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.5
	07/09/95	9.52	NA	NA	NA	NA	NA	NA	NA	NA
	07/31/98	8.40	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02/11/99	7.77	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	06/23/99	9.21	<50	<50	<0.5	<0.5	<0.5	<0.5	3.0	NA
	12/06/99	11.12	<110	<50	3	1	<0.5	1	0.6	NA
	03/16/00	6.48	<50	<50	<0.5	<0.5	<0.5	<1.0	1.0	NA
	06/13/00	8.76	<50	490	0.8	<0.5	<0.5	9	2	NA
	09/29/00	10.20	<50	57	<0.5	<0.5	<0.5	<1.0	<1.0 ⁽³⁾	NA
	03/22/01	8.24	<50	<50	<0.5	<0.5	<0.5	<1.0	2	NA
09/28/01	11.34	NA	91	<0.5	<0.5	<0.5	2	2	NA	
MW-4	12/06/99	10.79	160	<50	3	2	0.6	4	140	NA
	03/16/00	6.86	90	<50	0.5	0.5	<0.5	2.0	34	NA
	06/13/00	8.18	<50	56	<0.5	<0.5	<0.5	<1.0	1	NA
	09/29/00	10.11	<50	92	0.7	<0.5	<0.5	3	<1.0 ⁽³⁾	NA
	04/05/01	8.26	<50	51	<0.5	0.5	<0.5	1	6.0 ⁽³⁾	NA
	09/28/01	10.98	NA	<50	<0.5	0.5	<0.5	2	2.0	NA
MW-5	12/06/99	10.17	2,800	30,000	2,200	3,300	910	7000	670	NA
	03/16/00	6.28	1,100	3,500	1,100	260	210	6300	260	NA
	06/13/00	7.95	1,100	6,500	2200	360	360	730	480	NA
	09/29/00	9.54	700*	3,900	990	120	300	340	390 ⁽³⁾	NA
	03/22/01	7.48	380*	4,300	780	240	250	530	190	NA
	09/28/01	10.39	NA	3,000	1,200	77	120	170	770	NA
MW-6	12/06/99	11.46	110	<50	2	2	0.8	8	1	NA
	03/16/00	8.32	<50	<50	8.0	8.0	5	18	<0.5	NA
	06/13/00	9.14	<50	75	0.7	1	0.9	2	0.6	NA
	09/29/00	10.81	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	NA
	03/22/01	8.64	<50	66	0.5	<0.5	<0.5	<1.0	3	NA
	09/28/01	11.70	NA	63	2	<0.5	<0.5	1.0	3.0	NA

<X = Concentration less than laboratory reporting limit

(1) Well not accessible because of a car obstruction

(2) NA denotes not analyzed

(3) Confirmed by EPA Method 8260

* Does not match diesel chromatogram pattern



5.0 FINDINGS

- The calculated groundwater flow direction is toward the south to southwest at a gradient of 0.002. This is consistent with previous sampling events.
- The greatest concentrations of dissolved phase hydrocarbons were detected in well MW-1 at 48,000 ppb TPHg, 5,200 ppb benzene, and 4,000 ppb MTBE. Non significant hydrocarbon concentrations were detected in the peripheral wells MW-2, MW-3, and MW-6.
- MW-1 and MW-2 showed fluctuating concentrations of the analyzed compounds from one quarter to the other. The downgradient wells showed non-significant concentrations of the same compounds. This would show a limited plume, lingering in the area of MW-1 and MW-5.

6.0 RECOMMENDATIONS

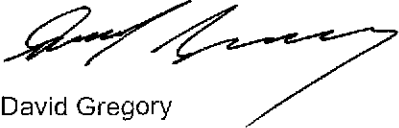
- As requested by Alameda County Environmental Health Services Agency (ACEHSA), in a letter dated October 1, 2001, TEC Accutite will prepare a site-specific Tier 2 Risk-Based Corrective Action (RBCA) study for this site. We expect to submit this study to ACEHSA within the next 90 days.

7.0 LIMITATIONS

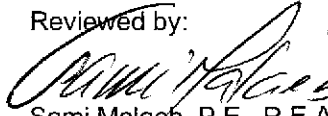
Our services consist of professional opinions, conclusions, and recommendations made today in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied.

Thank you for your cooperation. If you have any questions, please contact the undersigned at (650) 952-5551, Ext. 205.

Sincerely,
TEC Accutite


David Gregory
Project Manager

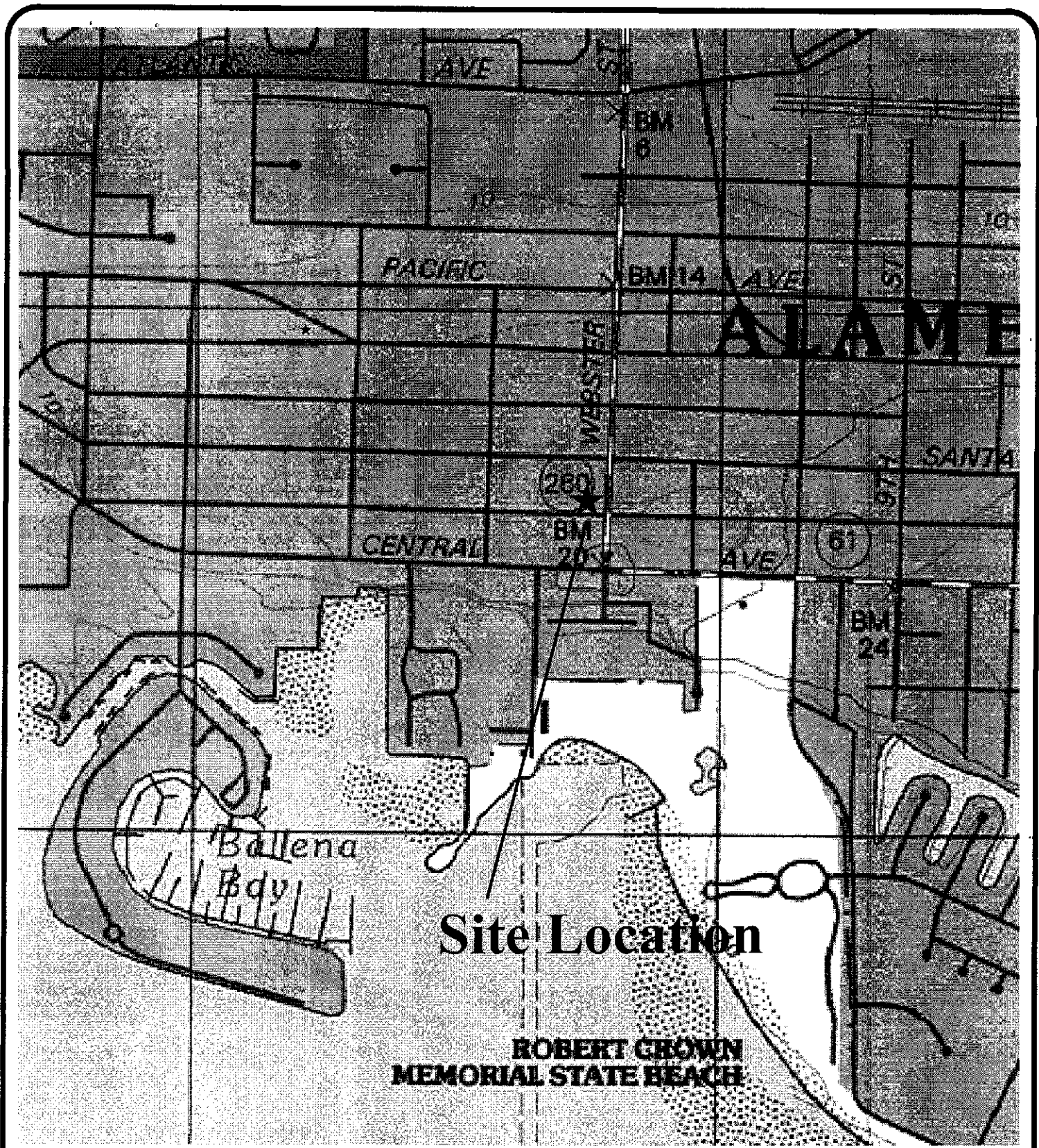
Reviewed by:


Sami Malaeb, P.E., R.E.A
Environmental Director



- cc: Mr. Rusty Firenze, Olympian, 260 Michelle Court, South San Francisco, CA 94080
Mr. David Harris, Esq., Trump, Alioto, Trump & Prescott, LLP, 2280 Union Street, San Francisco, CA 94123
Mr. Jeff Farrar, P.O. Box 1701, Chico, CA 95927
Mr. Thomas Ballard, GHH Engineering, Inc., 8084 Old Auburn Road, Citrus Height, CA 95610





	DATE 11/15/00	PAGE 1 of 1
	NO SCALE	
	LEGEND:	

**35 SOUTH LINDEN AVENUE
SOUTH SAN FRANCISCO**

**FIGURE 1
SITE VICINITY MAP**

Vicinitymap.TCW

**SITE:
1435 WEBSTER STREET
ALAMEDA, CA**

PROPERTY
BOUNDARY

**PUBLIC PARKING LOT
AND FORMER GAS STATION
1435 WEBSTER STREET
ALAMEDA, CALIFORNIA**

FORMER
GAS ISLAND

MW-6
(8.57')

MW-5
(8.60')

8.6'

SIDEWALK

8.5'

FORMER 500-GALLON
WASTE OIL UST

GROUNDWATER GRADIENT
FLOW DIRECTION, SEPTEMBER 2001

0.002

FORMER
GAS ISLAND

8.5'

FORMER 10,000-GALLON
REG. GAS UST

MW-3
(8.45')

MW-1
(8.47')

8.4'

FORMER 10,000-GALLON
REG. GAS UST

MW-2
(8.40')

8.4'

WEBSTER STREET

FORMER 7,500-GALLON
DIESEL UST

Fire Hydrant

SIDEWALK

MW-4

TAYLOR AVENUE (8.32')

REVISIONS

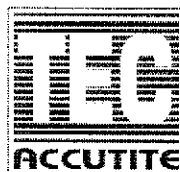
DATE
09/28/01

PAGE
1 of 1

FIGURE 2
GROUNDWATER FLOW DIRECTION
AND GRADIENT SEPTEMBER 2001
1435 WEBSTER STREET
ALAMEDA, CALIFORNIA



SCALE: ONE INCH = 20 FEET



35 SOUTH LINDEN AVENUE
SOUTH SAN FRANCISCO

KEY:



MONITORING WELLS

0.002

GROUNDWATER FLOW DIRECTION
AND GRADIENT

**PUBLIC PARKING LOT
AND FORMER GAS STATION
1435 WEBSTER STREET
ALAMEDA, CALIFORNIA**

**PROPERTY
BOUNDARY**

G 63
B 2.0
M 3.0

MW-6

FORMER
GAS ISLAND

MW-5

G 3,000
B 1,200
M 770

SIDEWALK

FORMER 500-GALLON
WASTE OIL UST

FORMER
GAS ISLAND

FORMER 10,000-GALLON
REG. GAS UST

FORMER 10,000-GALLON
REG. GAS UST

MW-3

G 91
B ND
M 2

MW-1

G 48,000
B 5,200
M 4,000

WEBSTER STREET

FORMER 7,500-GALLON
DIESEL UST

MW-2

G 300
B 4
M 130

Fire Hydrant

SIDEWALK

TAYLOR AVENUE

MW-4

G ND
B ND
M 2.0

REVISIONS

DATE
09/28/01

PAGE
1 of 1



**35 SOUTH LINDEN AVENUE
SOUTH SAN FRANCISCO**

FIGURE 3

HYDROCARBON CONCENTRATIONS IN GROUNDWATER
SEPTEMBER 2001
1435 WEBSTER STREET
ALAMEDA, CALIFORNIA

KEY:



MONITORING WELLS

G = TPHG
B = BENZENE
M = MTBE

GWHCSEP2001.TCW



SCALE: ONE INCH = 20 FEET

ATTACHMENT A
MONITORING WELL SAMPLING LOGS



WATER SAMPLING FORM

CLIENT: Olympian
 ADDRESS: 1435 Webster St, Alameda
 WELL # TESTED: MW1

To convert water column height to total amount of gallons in one (1) well volume, multiply the water column height by A.

WELL DIAMETER	A
<u>2"</u>	0.17
3"	0.36
4"	0.65

TOTAL WELL DEPTH 20'
 - DEPTH TO WATER 11.06
 = WATER COLUMN HEIGHT 8.94 x A = GAL (1 well volume)

Multiply one (1) well volume by three (3) to obtain the minimum # of gallons to be extracted before taking well sample(s).

3 x = 4.5 gal (3 well volume)

DATE: 9/28/01
 TIME: 12:00
 WATER LEVEL: 11.11

TIME:	GALS PUMPED	TEMP	COND.	PH
<u>11:24</u>	<u>1.5</u>	<u>20.3</u>	<u>428 uS</u>	<u>6.14</u>
<u>11:26</u>	<u>3.0</u>	<u>21.2</u>	<u>407 uS</u>	<u>6.18</u>
<u>11:27</u>	<u>4.5</u>	<u>21</u>	<u>433 uS</u>	<u>6.15</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Time:
 Volume Pumped:
 Sampler: 7.4

Sheen or inches of free product:
 Analyzed for:
H2S above
Wk-mud gas below

WATER SAMPLING FORM

CLIENT: Olympian
 ADDRESS: 1435 Webster St, Alameda
 WELL # TESTED: MW 2

To convert water column height to total amount of gallons in one (1) well volume, multiply the water column height by A.

WELL DIAMETER	A
<u>2"</u>	0.17
3"	0.36
4"	0.65

TOTAL WELL DEPTH 20'
 - DEPTH TO WATER 11.4'
 = WATER COLUMN HEIGHT x A = GAL (1 well volume)

Multiply one (1) well volume by three (3) to obtain the minimum # of gallons to be extracted before taking well sample(s).

$$3 \times \quad = \quad \underline{4.4} \quad (3 \text{ well volume})$$

DATE: 9/22/01
 TIME: 11:00
 WATER LEVEL: 11.4'

TIME:	GALS PUMPED	TEMP	COND.	PH
<u>9.50</u>	<u>1.5</u>	<u>20.7</u>	<u>700 μS</u>	<u>6.15</u>
<u>9.52</u>	<u>3.0</u>	<u>20.9</u>	<u>707 μS</u>	<u>6.17</u>
<u>9.54</u>	<u>4.5</u>	<u>20.8</u>	<u>749 μS</u>	<u>6.14</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Time:
 Volume Pumped:
 Sampler: D.C.

Sheen or inches of free product:
 Analyzed for:

WATER SAMPLING FORM

CLIENT: Olympian
 ADDRESS: 1435 Webster St, Alameda
 WELL # TESTED: MW3

To convert water column height to total amount of gallons in one (1) well volume, multiply the water column height by A.

WELL DIAMETER	A
2"	0.17
3"	0.36
4"	0.65

TOTAL WELL DEPTH 20'
 - DEPTH TO WATER 11.34
 = WATER COLUMN HEIGHT x A = GAL (1 well volume)

Multiply one (1) well volume by three (3) to obtain the minimum # of gallons to be extracted before taking well sample(s).

$3 \times \quad = \quad 4.4 \quad (3 \text{ well volume})$

DATE: 9/28/01
 TIME: 10:45
 WATER LEVEL: 1.37'

TIME:	GALS PUMPED	TEMP	COND.	PH
<u>10.00</u>	<u>1.5</u>	<u>21.8</u>	<u>252 μS</u>	<u>6.14</u>
<u>10.01</u>	<u>3.0</u>	<u>22.4</u>	<u>255 μS</u>	<u>6.14</u>
<u>10.03</u>	<u>4.5</u>	<u>22.3</u>	<u>248 μS</u>	<u>6.13</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Time:
 Volume Pumped:
 Sampler: D. G

Sheen or inches of free product:
 Analyzed for:

WATER SAMPLING FORM

CLIENT: Olympian
 ADDRESS: 1435 Webster St, Alameda
 WELL # TESTED: MW4

To convert water column height to total amount of gallons in one (1) well volume, multiply the water column height by A.

WELL DIAMETER	A
2"	0.17
3"	0.36
4"	0.65

TOTAL WELL DEPTH 20'
 - DEPTH TO WATER 10.98'
 = WATER COLUMN HEIGHT $\times A =$ GAL (1 well volume)

Multiply one (1) well volume by three (3) to obtain the minimum # of gallons to be extracted before taking well sample(s).

3 x = 4.6 (3 well volume)

DATE: 9/28/01
 TIME: 11:15
 WATER LEVEL: 1104

TIME:	GALS PUMPED	TEMP	COND.	PH
9:20	1.5	18.1	182.3 μ S	6.14
9:25	3.0	18.9	177.8 μ S	6.14
9:40	4.6	18.7	231 μ S	6.16
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Time:
 Volume Pumped:
 Sampler:

Sheen or inches of free product:
 Analyzed for:

WATER SAMPLING FORM

CLIENT: Olympian
 ADDRESS: 1435 Webster St, Alameda
 WELL # TESTED: MW6

To convert water column height to total amount of gallons in one (1) well volume, multiply the water column height by A.

WELL DIAMETER	A
<u>2"</u>	<u>0.17</u>
<u>3"</u>	<u>0.36</u>
<u>4"</u>	<u>0.65</u>

TOTAL WELL DEPTH 19.39'
 - DEPTH TO WATER 11.7
 = WATER COLUMN HEIGHT x A = GAL (1 well volume)

Multiply one (1) well volume by three (3) to obtain the minimum # of gallons to be extracted before taking well sample(s).

3 x = 3.92 (3 well volume)

DATE: 9/28/01
 TIME: 11:45
 WATER LEVEL:

TIME:	GALS PUMPED	TEMP	COND.	PH
<u>10-12</u>	<u>1.3</u>	<u>20.6</u>	<u>440µS</u>	<u>6.14</u>
<u>10-14</u>	<u>2.6</u>	<u>21.7</u>	<u>548µS</u>	<u>6.14</u>
<u>10-15</u>	<u>4.0</u>	<u>21.7</u>	<u>542µS</u>	<u>6.14</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Time:
 Volume Pumped:
 Sampler:

Sheen or inches of free product:
 Analyzed for:



North State Environmental Laboratory

CA ELAP# 1753

90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 01-1426
 Client: Technology Eng. Const.
 Project: OLYMPIAN, 1435 WEBSTER ST., ALAMEDA

Date Reported: 10/05/2001

Gasoline, BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 01-1426-01 Client ID: MW 1					
				09/28/2001	WATER
Gasoline	8015M	48000	ug/L		10/02/2001
Benzene	8020	5200	ug/L		
Ethylbenzene	8020	2200	ug/L		
MTBE	8020	*4000	ug/L		
Toluene	8020	6100	ug/L		
Xylenes	8020	8100	ug/L		
Sample: 01-1426-02 Client ID: MW 2					
				09/28/2001	WATER
Gasoline	8015M	300	ug/L		10/02/2001
Benzene	8020	4	ug/L		
Ethylbenzene	8020	3	ug/L		
MTBE	8020	130	ug/L		
Toluene	8020	6	ug/L		
Xylenes	8020	10	ug/L		
Sample: 01-1426-03 Client ID: MW 3					
				09/28/2001	WATER
Gasoline	8015M	91	ug/L		10/02/2001
Benzene	8020	ND			
Ethylbenzene	8020	ND			
MTBE	8020	2	ug/L		
Toluene	8020	ND			
Xylenes	8020	2	ug/L		

*Confirmed by GC/MS method 8260.



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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 01-1426
Client: Technology Eng. Const.
Project: OLYMPIAN, 1435 WEBSTER ST., ALAMEDA

Date Reported: 10/05/2001

Gasoline, BTEX and MTBE by Methods 8015M and 8020

Table with 7 columns: Analyte, Method, Result, Unit, Date Sampled, Date Analyzed. It contains three sections of data for samples 01-1426-01, 01-1426-02, and 01-1426-03, listing various hydrocarbons and their concentrations.

*Confirmed by GC/MS method 8260.



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C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 01-1426
 Client: Technology Eng. Const.
 Project: OLYMPIAN, 1435 WEBSTER ST., ALAMEDA

Date Reported: 10/05/2001

Gasoline, BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 01-1426-04 Client ID: MW 4					
				09/28/2001	WATER
Gasoline	8015M	ND			10/02/2001
Benzene	8020	ND			
Ethylbenzene	8020	ND			
MTBE	8020	2	ug/L		
Toluene	8020	ND			
Xylenes	8020	2	ug/L		
Sample: 01-1426-05 Client ID: MW 5					
				09/28/2001	WATER
Gasoline	8015M	3000	ug/L		10/02/2001
Benzene	8020	1200	ug/L		
Ethylbenzene	8020	120	ug/L		
MTBE	8020	770	ug/L		
Toluene	8020	77	ug/L		
Xylenes	8020	170	ug/L		
Sample: 01-1426-06 Client ID: MW 6					
				09/28/2001	WATER
Gasoline	8015M	63	ug/L		10/02/2001
Benzene	8020	2	ug/L		
Ethylbenzene	8020	ND			
MTBE	8020	3	ug/L		
Toluene	8020	ND			
Xylenes	8020	1	ug/L		

*Confirmed by GC/MS method 8260.



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CA ELAP# 1753

C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 01-1426
Client: Technology Eng. Const.
Project: OLYMPIAN, 1435 WEBSTER ST., ALAMEDA

Date Reported: 10/05/2001

Gasoline, BTEX and MTBE by Methods 8015M and 8020

Analyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
Gasoline	8015M	50	ug/L	ND	86	0
Benzene	8020	0.5	ug/L	ND	95	5
Toluene	8020	0.5	ug/L	ND	96	2
Ethylbenzene	8020	0.5	ug/L	ND	98	2
Xylenes	8020	1.0	ug/L	ND	97	3
MTBE	8020	0.5	ug/L	ND	76	7

ELAP Certificate NO:1753

Reviewed and Approved

John A. Murphy, Laboratory Director

Chain of Custody Accutite Environmental Engineering

01-1426

Client: Accutite Environmental Engineering				Report To: DAVID GREGORY		Turnaround:			
Address: 35 South Linden Avenue South San Francisco, CA 94080				Bill To: Accutite		ASAP	1 Day	2 Day	3 Day
Phone: 650-952-5551				Billing Reference#: 5370		1 Week	2 Week	Others	
Project Name/Address: Olympian 1435 Webster St, Alameda						Analysis Required			
Sampler			Date:			TPH (6015)	BTEX, MTBE (6020)	Remarks	
Sample ID	Sample Matrix	# of Containers	Container Type	Sample Date/Time					
MW1	water	3 VOA's		9/28/01 12:00		X	X	Confirm MTBE 8260	
MW2	↓	↓		11:00		X	X		
MW3	↓	↓		10:45		X	X		
MW4	↓	↓		11:15		X	X		
MW5	↓	↓		12:20		X	X		
MW6	↓	↓		11:45		X	X		
Relinquished by: <i>[Signature]</i>				Date: 9/28/01	Time: 2:00	Received by: <i>[Signature]</i>		Date: 9-28-01	Time: 2:00 pm
Relinquished by:				Date:	Time:	Received by:		Date:	Time:
Relinquished by:				Date:	Time:	Received by:		Date:	Time: