INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI

March 31, 2000

Project No.: 97-037

Mr. Joseph Cotton
City of Oakland Environmental Services
250 Frank H. Ogawa Plaza, Suite 5301
Oakland, CA 94612

Results of Semi-Annual Groundwater Monitoring on January 21, 2000
2662 Fruitvale Avenue
Oakland, California

Dear Mr. Cotton:

Innovative Technical Solutions, Inc. (ITSI) is pleased to provide the results of the semi-annual groundwater monitoring performed on January 21, 2000 at the property located at 2662 Fruitvale Avenue in Oakland. The semi-annual groundwater monitoring included the monitoring and sampling of five monitoring wells, MW-F2, MW-F4, MW-F5, MW-F6, and MW-13. Figure 1 shows the site layout and approximate location of the monitoring wells sampled as part of this semi-annual groundwater monitoring event. Monitoring wells MW-F1 and MW-F3 were removed from the semi-annual monitoring program as suggested in the November 18, 1999 letter from Alameda County, provided in Appendix A. Monitoring Well MW-F2 was retained to provide an upgradient "background" sample.

The purpose of this groundwater monitoring program is to identify changes in shallow groundwater quality at the site over time, including an evaluation of groundwater conditions that may serve as indicators of intrinsic bioremediation of petroleum hydrocarbons occurring beneath the site. On October 31, 1998, oxygen-releasing compounds (ORC) were placed in the saturated zone along the downgradient property line to enhance natural biodegradation of the petroleum hydrocarbons, and a petroleum hydrocarbon-absorbent sock was placed in MW-13 to recover available free product at that time. These events were documented in the *Completion Report, Treatment of Groundwater Impacted with Petroleum Hydrocarbons Using Enhanced Natural Bioremediation*, (Innovative Technical Solutions, Inc., December 28, 1998).

1330 Broadway, Suite 1625, Oakland, CA 94612 (510) 286-8888 (510) 286-8889 fax

SCOPE OF WORK

Prior to sampling, the presence of floating product was evaluated in each of the monitoring wells using an oil/water interface probe. Water levels were then measured in each of the wells to 0.01 foot using a water level meter. Depth to water measurements and thickness of floating product, if present, were recorded on Monitoring Well Purge and Sample Forms. Copies of the Monitoring Well Purge and Sample Forms are included in Appendix B.

After depth to water measurements were recorded, the monitoring wells were purged using a peristaltic pump. Approximately three casing volumes of water were removed, until pH, conductivity, and temperature readings stabilized. Field parameters were recorded on the Monitoring Well Purge and Sample Forms.

Groundwater samples from each monitoring well were collected using the peristaltic pump and transferred into laboratory provided sample containers with appropriate preservatives. Samples were labeled, placed on ice in an insulated cooler, and transported under chain-of-custody procedures to Chromalab, Inc., a California-certified laboratory.

Groundwater samples were analyzed for the following:

- TPH as gasoline (TPHg) by modified EPA Method 8015.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020A.
- Nitrate, sulfate, and total and soluble iron.

RESULTS

Groundwater elevations and the presence and thickness of floating product are summarized in Table 1 and shown in Figure 1. Results of groundwater sample analyses are summarized in Table 2 and shown in Figures 2 and 3. Copies of the analytical results and chain-of-custody form are included in Appendix C.

Depth to groundwater ranged from approximately 8 to 10 feet below ground surface (bgs). Groundwater flow direction was generally towards the west-southwest. The groundwater flow direction is generally consistent with groundwater flow directions from previous monitoring

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Environmental Services

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4457

June 17, 2000

Mr. Barney Chan
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: **Results of Semi-Annual Groundwater Monitoring on January 21, 2000**
2662 Fruitvale Avenue Oakland, California

Dear Mr. Chan:

Enclosed is one copy of the subject report, prepared by our consultant, Innovative Technical Solutions, Inc., for the property located at 2662 Fruitvale Avenue in Oakland.

The next monitoring event will be performed in July. A report containing the results will be sent to you in September 2000.

Please call me at 238-6259, if you have any questions or require additional information.

Sincerely,

Joseph A. Cotton
Environmental Program Specialist

events, with minor variation to the overall flow direction in the area where the ORC was placed, possibly showing the effect of the ORC slurry.

Floating product was not observed in the five wells sampled during the January 21, 2000 sampling event. Although floating product had been observed in monitoring well MW-13 at a thickness of approximately 0.02 feet during two sampling events in June 1997 and March 1998, floating product was not observed in MW-13 during the December 1998, June 29, 1999, and January 21, 2000 sampling events. As noted above, a petroleum hydrocarbon-absorbent sock was placed in MW-13 to remove available free product from the surface of the groundwater. This sock was removed to conduct the product check in MW-13 and was replaced during the January 21, 2000 sampling event.

Petroleum Hydrocarbons

TPHg was detected in samples from two monitoring wells, MW-F4 and MW-13, at concentrations of 7.9 and 7.3 milligrams per liter (mg/L), respectively. TPHg was not detected (at a detection limit of 0.05 mg/L) in the other three monitoring wells sampled.

Aromatic hydrocarbons (benzene, toluene, ethylbenzene, and xylenes) were not detected in samples collected from the five monitoring wells at concentrations above the detection limit (0.0005 mg/L), except as noted below:

- Benzene was detected in samples collected from two monitoring wells, MW-F4 and MW-13, at concentrations of 0.033 and 0.035 mg/L, respectively. Benzene concentrations detected in MW-F4 and MW-13 exceed the Maximum Contaminant Level (MCL) for benzene of 0.001 mg/L. MCLs are drinking water standards established by California Code of Regulations (CCR) Title 26.
- Ethylbenzene was detected in samples collected from two monitoring wells, MW-F4 and MW-13, at concentrations of 1.0 and 0.62 mg/L, respectively. The ethylbenzene concentration detected in MW-F4 exceeds the MCL for ethylbenzene of 0.7 mg/L.
- Xylenes were detected in samples collected from two monitoring wells, MW-F4 and MW-13, at concentrations of 0.25 and 0.22 mg/L, respectively.

Intrinsic Bioremediation Indicator Compounds

Table A below provides the results of bioremediation indicator parameters, including both laboratory and field measurements.

Table A: Bioremediation Indicator Parameters

Monitoring Well ID	Total Iron (mg/L)	Soluble Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Oxygen	ORP
MW-F2	<0.10	<0.10	<0.2	9	8.63	121
MW-F4	13	2.7	<0.2	<1.0	9.19	81
MW-F5	0.14	<0.10	5.2	42	8.53	189
MW-F6	0.11	<0.10	0.5	42	9.17	156
MW-13	7.3	6.9	<0.2	<1.0	9.15	87

As shown above, soluble iron, representing ferrous iron (Fe^{2+}), was detected in two of the five wells sampled, MW-F4 and MW-13, at concentrations of 2.7 mg/L and 6.9 mg/L, respectively. Soluble iron was only detected in samples collected from wells within the area of petroleum hydrocarbon-affected groundwater.

Nitrate was detected in two of the five monitoring wells sampled, MW-F5 and MW-F6, at concentrations of 5.2 mg/L and 0.5 mg/L, respectively. Sulfate was detected in three (MW-F2, MW-F5, and MW-F6) of the five wells sampled, at concentrations ranging from 9 to 42 mg/L. The lowest concentrations of nitrate and sulfate were reported in samples from wells within or adjacent to the area of petroleum hydrocarbon-affected groundwater.

Dissolved oxygen, as monitored in the field during purging of the monitoring wells, was relatively high in all of the wells (approximately 9 mg/L). Oxidation Reduction Potential (ORP) measurements ranged around 80-87 mV in MW-F4 and MW-13, wells within the area of petroleum hydrocarbon-affected groundwater. ORP ranged from a low of 121 mV in MW-F2 to a high of 189 mV in MW-F5, wells outside the area of petroleum hydrocarbon-affected groundwater.

DISCUSSION

No floating product was observed in monitoring well MW-13 during the January 2000 sampling event. Floating product was reported in MW-13 during previous monitoring events. As noted above, a petroleum hydrocarbon absorbent sock was replaced in MW-13 to remove floating product from the groundwater surface and is routinely replaced during each monitoring event. The absorbent sock appears to be removing the floating product.

Concentrations of TPHg and BTEX were reported in MW-F4 and MW-13, located in the southwest corner of the site and offsite to the southwest, respectively. These results are consistent with the data collected during previous monitoring events, and show a general decrease from the previous sampling event.

The extent of the plume appears relatively limited. TPHg and BTEX were not reported in MW-F5 and MW-F6, which are located downgradient of MW-13. Previous sporadic detection of TPHg (June 1995), benzene (June 1997), and xylenes (December 1996) indicate that MW-F5 is located near the downgradient margin of the plume. Water quality monitoring of MW-F5 and MW-F6 should be continued to evaluate potential changes in water quality in these downgradient wells.

Intrinsic bioremediation indicator parameters are generally supportive of active biodegradation occurring in groundwater beneath the site. Typically, the electron receptors nitrate and sulfate are lowest in the wells with the highest concentrations of TPHg (MW-F4 and MW-13), and soluble (ferrous) iron, an indicator of the reduction of ferric iron, tends to be highest in these same wells. The depletion of nitrate and sulfate and the enhancement of soluble iron are all indicators of anaerobic biodegradation processes.

Since the introduction of ORC, several trends have been observed which support the effectiveness of the ORC in reducing overall TPHg and benzene concentrations in the affected groundwater. Prior to introduction of the ORC, seasonal water level fluctuations significantly affected TPHg concentrations, especially in monitoring well MW-4 close to the apparent source area. Since the introduction of the ORC, the historic peaks in TPHg concentrations previously observed during the higher groundwater elevations in the winter have been moderated. This is apparent in Figure 4a showing a graph of the historical concentrations of TPHg in monitoring wells MW-4 and MW-13.

Also, concentrations of benzene in monitoring wells MW-4 and MW-13 are at their lowest levels since the initiation of semi-annual monitoring in 1994, and have dropped nearly an order of magnitude from results for the previous few monitoring events. Figure 4b shows a graph of the historical concentrations of benzene in monitoring wells MW-4 and MW-13.

RECOMMENDATIONS

Based on the results of this semi-annual monitoring and sampling event, the following activities are recommended:

- Continued semi-annual water quality monitoring of MW-F2, MW-F4 through MW-F6 and MW-13 to monitor the extent of the groundwater plume and the effects of intrinsic bioremediation on the plume.
- Continued evaluation of intrinsic bioremediation parameters to assess the effectiveness of ORC emplacement.
- Application of discrete doses of 1-3% medical-grade hydrogen peroxide in monitoring wells MW-4 and MW-13 to encourage both the chemical oxidation of the TPHg and benzene, and continued biodegradation of these chemicals.

Application of the hydrogen peroxide would be performed by dosing both of the wells with several pints of over-the-counter medical-grade hydrogen peroxide on a weekly basis. This would continue for approximately 6 to 8 weeks in time, and would be discontinued approximately 1-2 weeks prior to the next scheduled semi-annual monitoring event. This would allow the wells to equilibrate with groundwater representative of the surrounding formation. This approach has proven successful on other sites, providing tangible reduction in TPHg and benzene concentrations well after cessation of the dosing. This approach is a natural escalation to the current enhanced intrinsic bioremediation program, and would meet the intent of suggestions for additional ORC application in the November 18, 1999 letter from Alameda County.

Please call me if you have any questions or need additional information.

Sincerely,

Jeffrey D. Hess, R.G.
Project Director

cc: Kevin O'Dea
Baseline Environmental Consulting

TABLE 1
GROUNDWATER ELEVATIONS
2662 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

Monitoring Well ID	Casing Elevation[1] (feet)	Date Measured	Product Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Note
MW-F1	104.41	08/16/93	-	11.13	93.28	1
		06/29/94	-	10 38	93 53	1
		09/09/94	-	11.56	92.85	1
		12/21/94	-	8.96	95.45	1
		06/30/95	-	10.49	93.92	1
		12/29/95	-	9.38	95.03	1
		06/27/96	-	10.69	93.72	1
		12/13/96	-	8.55	95.86	1
		6/26/97	-	11.23	93.18	
		3/11/98	-	8.73	95.68	
		12/11/98	-	9.38	95 03	
		6/29/99	-	10.87	93.54	
		1/21/00	-	9.42	94.99	
MW-F2	102.22	08/16/93	-	12.15	90.07	1
		06/29/94	-	11.74	90.48	1
		09/09/94	-	12.21	90.01	1
		12/21/94	-	10.34	91.88	1
		06/30/95	-	11.32	90.90	1
		12/29/95	-	9.94	92.28	1
		06/27/96	-	11.51	90.71	1
		12/13/96	-	8.62	93.60	1
		6/26/97	-	11.96	90.26	
		3/11/98	-	7.70	94.52	
		12/11/98	-	10.40	91.82	
		6/29/99	-	11.42	90.80	
		1/21/00	-	10.32	91.9	
MW-F3	102.42	08/16/93	-	11.99	90.43	1
		06/29/94	-	11.40	91.02	1
		09/09/94	-	12.39	90.03	1
		12/21/94	-	9.32	93.10	1
		06/30/95	-	11.14	91.28	1
		12/29/95	-	10.08	92.34	1
		06/27/96	-	11.31	91.11	1
		12/13/96	-	8.76	93.66	1
		6/26/97	-	11.85	90 57	
		3/11/98	-	8.82	93.6	
		12/11/98	-	9.61	92.81	
		6/29/99	-	11.25	91 17	

TABLE 1 (Continued)
GROUNDWATER ELEVATIONS
2662 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

Monitoring Well ID	Casing Elevation[1] (feet)	Date Measured	Product Thickness (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Note
MW-F4	101.56	09/09/94	-	11.21	90.35	1
		12/21/94	-	8.00	93.56	1
		06/30/95	-	10.08	91.48	1
		12/29/95	-	8.52	93.04	1
		06/27/96	-	9.75	91.81	1
		12/13/96	-	6.61	94.95	1
		6/26/97	-	10.94	90.62	
		3/11/98	-	8.40[2]	-	
		12/11/98	-	9.40	92.16	
		6/29/99	-	10.36	91.20	
		1/21/00	-	8.11	93.45	
MW-F5	100.32	06/30/95	-	11.09	89.23	1
		12/29/95	-	9.37	90.95	1
		06/27/96	-	11.33	88.99	1
		12/13/96	-	8.72	91.60	1
		6/26/97	-	11.61	88.71	
		3/11/98	-	8.79	91.53	
		12/11/98	-	9.62	90.70	
		6/29/99	-	11.07	89.25	
		1/21/00	-	9.39	90.93	
MW-F6	100.11	06/30/95	-	10.96	89.15	1
		12/29/95	-	9.84	90.27	1
		06/27/96	-	10.98	89.13	1
		12/13/96	-	8.44	91.67	1
		6/26/97	-	11.35	88.76	
		3/11/98	-	8.60	91.51	
		12/11/98	-	10.12	89.99	
		6/29/99	-	10.96	89.15	
		1/21/00	-	9.37	90.74	
MW-13	101.20	09/09/94	-	12.27	88.93	1
		12/21/94	-	9.32	91.88	1
		06/30/95	-	11.32	89.88	1
		12/29/95	-	9.00	92.20	1
		06/27/96	-	11.49	89.71	1
		12/13/96	-	8.28	92.92	1
		6/26/97	0.02	11.76	89.45[3]	
		3/11/98	0.02	8.11	93.11[3]	
		12/11/98	-	9.30	91.90	
		6/29/99	-	11.08	90.12	
		1/21/00	-	9.22	91.98	

[1] From Table 3, Groundwater Elevation and Gradient Determination Data, February 7, 1997, BASELINE.
[2] Depth to groundwater not stabilized.
[3] Groundwater elevation calculated assuming a specific gravity of 0.75 for product.

TABLE 2
SUMMARY OF LABORATORY RESULTS FOR GROUNDWATER SAMPLES
2662 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

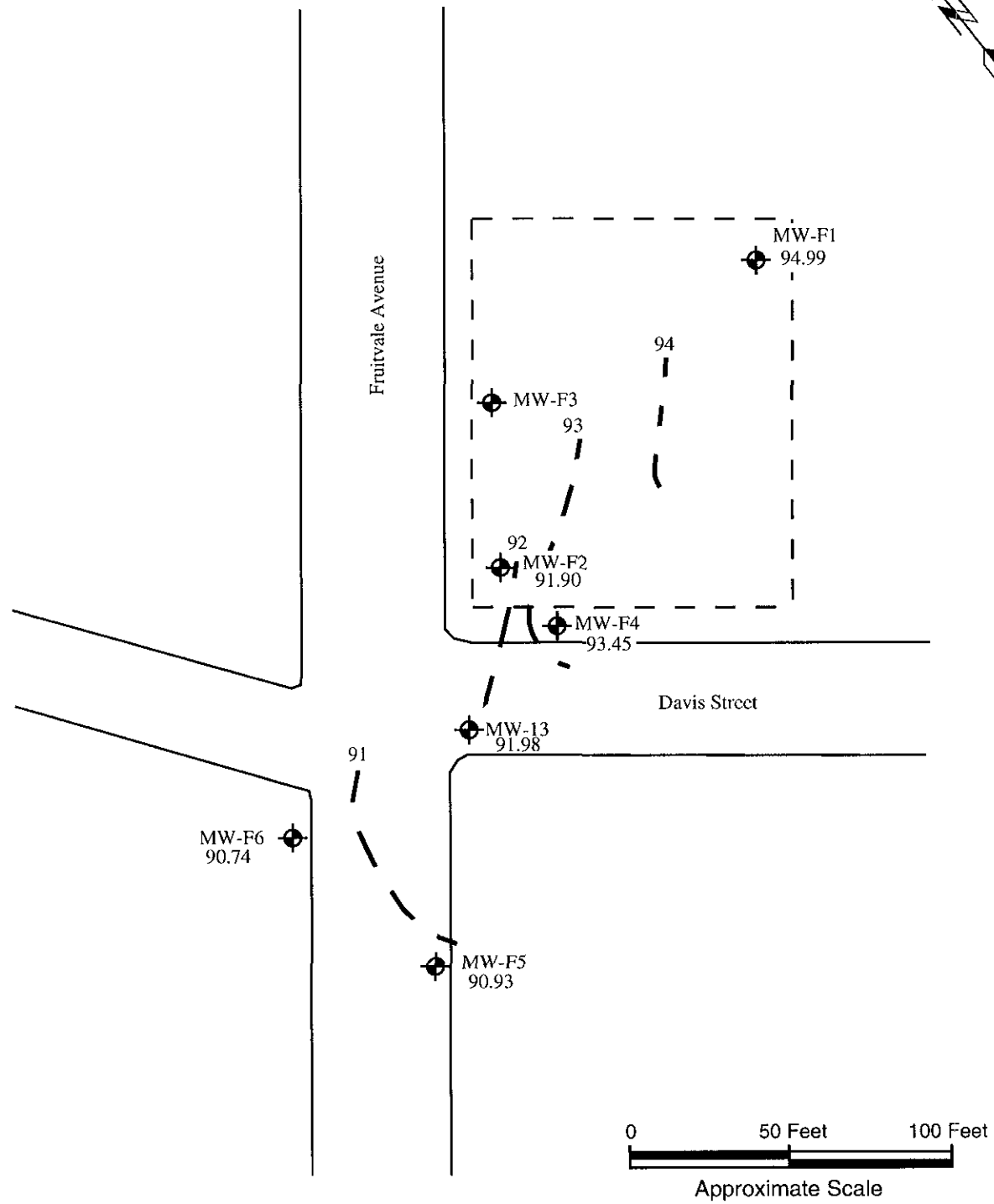
Monitoring Well ID	Date Sampled	TPHg (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Xylenes (mg/L)	Total Iron (mg/L)	Soluble Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Note
MW-F1	08/16/93	<0.05	<0.002	<0.002	<0.002	<0.002	-	-	-	-	1
	06/29/94	<0 05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	09/09/94	<0.9	<0.0009	<0.0009	<0.0009	<0.0009	-	-	-	-	1
	12/21/94	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	06/30/95	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/29/95	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/13/96	-	-	-	-	-	-	<0.10	**8.5**	**38**	1
	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.1**	<0.10	**7.7**	**38**	
	3/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.90**	<0.10	**11**	**38**	
	12/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0 10	<0.10	**7.1**	**38**	
	6/29/99	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	**30**	**35**	
	No longer part of semi-annual monitoring program										
MW-F2	08/16/93	<0.05	<0.002	<0.002	<0.002	<0.002	-	-	-	-	1
	06/29/94	<0.05	<0 0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	09/09/94	<0.9	<0.0009	<0.0009	<0.0009	<0.0009	-	-	-	-	1
	12/21/94	**0.096**	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	06/30/95	**0.34**	<0.0005	<0.0005	<0.0005	**0.0005**	-	-	-	-	1
	12/29/95	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	06/27/96	**0.064**	**0.0012**	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/13/96	**0.06**	<0.0005	<0.0005	<0.0005	<0 0005	-	**0.24**	**0.20**	**8**	1
	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.1**	<0.10	<0.05	**7.4**	
	3/11/98	**0.20**	**0.00088**	<0.0005	<0.0005	<0.0005	**4.8**	**0.18**	<0.05	**7.1**	
	12/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.25**	<0.10	<0.05	**7.8**	
	6/29/99	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	<1.0	<1.0	
	1/21/00	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	<0.2	**9**	
MW-F3	08/16/93	<0.1	<0.002	<0.002	<0.002	<0.002	-	-	-	-	1
	06/29/94	<0.05	<0 0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	09/09/94	<0.9	<0.0009	<0.0009	<0.0009	<0.0009	-	-	-	-	1
	12/21/94	**0.13**	<0.0005	**0.0013**	<0.0005	<0.0005	-	-	-	-	1
	06/30/95	**0.11**	<0 0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/29/95	**0.35**	**0.0008**	<0.0005	**0.0012**	**0.0007**	-	-	-	-	1
	06/27/96	**0.088**	**0.002**	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/13/96	**0.18**	<0.0005	<0.0005	<0.0005	<0.0005	–	**0.11**	**0.69**	**23**	1
	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.46**	**0.16**	**0.70**	**23**	
	3/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.11**	**0.20**	**2.5**	**28**	
	12/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.31**	**0.12**	**0.97**	**30**	
	6/29/99	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	**3**	**38**	
	No longer part of semi-annual monitoring program										

TABLE 2 (Continued)
SUMMARY OF LABORATORY RESULTS FOR GROUNDWATER SAMPLES
2662 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

Monitoring Well ID	Date Sampled	TPHg (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Xylenes (mg/L)	Total Iron (mg/L)	Soluble Iron (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Note
MW-F4	9/9/94*	3.5	0.029	0.0030	0.038	0.099	-	-	-	-	1
	12/21/94	37	0.66	28	2.3	5.9	-	-	-	-	1
	06/30/95	9.2	0.18	<0.1	0.76	1.0	-	-	-	-	1
	12/29/95	38	0.61	0.019	4.3	5.8	-	-	-	-	1
	06/27/96	6.2	0.081	0.14	0.52	0.29	-	-	-	-	1
	12/13/96	27	0.39	0.05	3.2	3.7	-	6.6	<0.05	<2	1
	6/26/97	6.2	0.16	0.018	0.71	0.32	2.4	3.1	<0.05	0.2	
	3/11/98	9.5	0.062	0.030	1.0	0.80	1.2	3.0	<0.05	<0.1	
	12/11/98	12	0.340	0.051	2.0	0.620	5.7	5.9	<0.05	1.5	
	6/29/99	10	0.230	0.032	1.8	0.30	0.93	0.90	<1.0	9	
	1/21/00	7.9	0.033	<0.005	1.0	0.25	13	2.7	<0.2	<1.0	
MW-F5	06/30/95	0.10	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/29/95	<0 05	<0.0005	<0.0005	<0 0005	0.0007	-	-	-	-	1
	06/27/96	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/13/96	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	6.6	45	1
	6/26/97	<0.05	0.0032	0.0064	0.00073	0.0042	0.21	<0.1	6.1	45	
	3/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	6.1	45	
	12/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.58	0.19	6.0	41	
	6/29/99	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	23	50	
	1/21/00	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.14	<0.10	5.2	42	
MW-F6	06/30/95	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/29/95	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	6/27/96	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	1
	12/13/96	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	–	<0.10	0.44	39	1
	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.22	0.18	<0.05	47	
	3/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	<0.10	0.14	49	
	12/11/98	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.24	0.11	0.06	43	
	6/29/99	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.10	0.93	<1.0	54	
	1/21/00	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.11	<0.10	0.5	42	
MW-13	12/21/94	3.3	0.33	<0.013	0.024	0.24	-	-	-	-	1
	06/30/95	22	0.85	<0.0005	1.2	1.6	-	-	-	-	1
	12/29/95	22	0.97	0.078	1.8	2.4	-	-	-	-	1
	06/27/96	18	0.63	0.026	1.1	1.0	-	-	-	-	1
	12/13/96	16	0.67	0.04	1.2	1.0	–	6.8	<0.05	<2	1
	6/26/97*	11	0.42	0.037	0.64	0.26	7.7	6.9	<0.05	0.3	
	3/11/98*	13	0.30	<0.025	0.89	0.51	4.3	6.7	<0.05	2.3	
	12/11/98	12	0.47	0.048	1.1	0.48	6.6	7.0	<0.05	16	
	6/29/99	7	0.24	0.13	0.44	0.11	1.3	1.3	<1.0	11	
	01/21/00	7.3	0.035	<0.005	0.62	0.22	7.3	6.9	<0.2	<1.0	
MCL	–	–	0.001	0.150	0.700	1.75	–	–	–	–	

Note: Bold indicates detected concentrations. Shaded indicates concentrations exceeding MCLs.
1 Historical laboratory data provided by Baseline Environmental Consulting.
* Higher concentration reported for either the sample or field duplicate sample (QC/1)

97-037/F 1-Well



Legend

Approximate Location of Monitoring Wells

90.74 Groundwater Elevations

Lines of Equal Groundwater Elevations

Source: Modified from Figure 3, Groundwater Elevation Contour Map, 13 December 1996, BASELINE.

FIGURE 1

GROUNDWATER ELEVATIONS MEASURED ON JANUARY 21, 2000

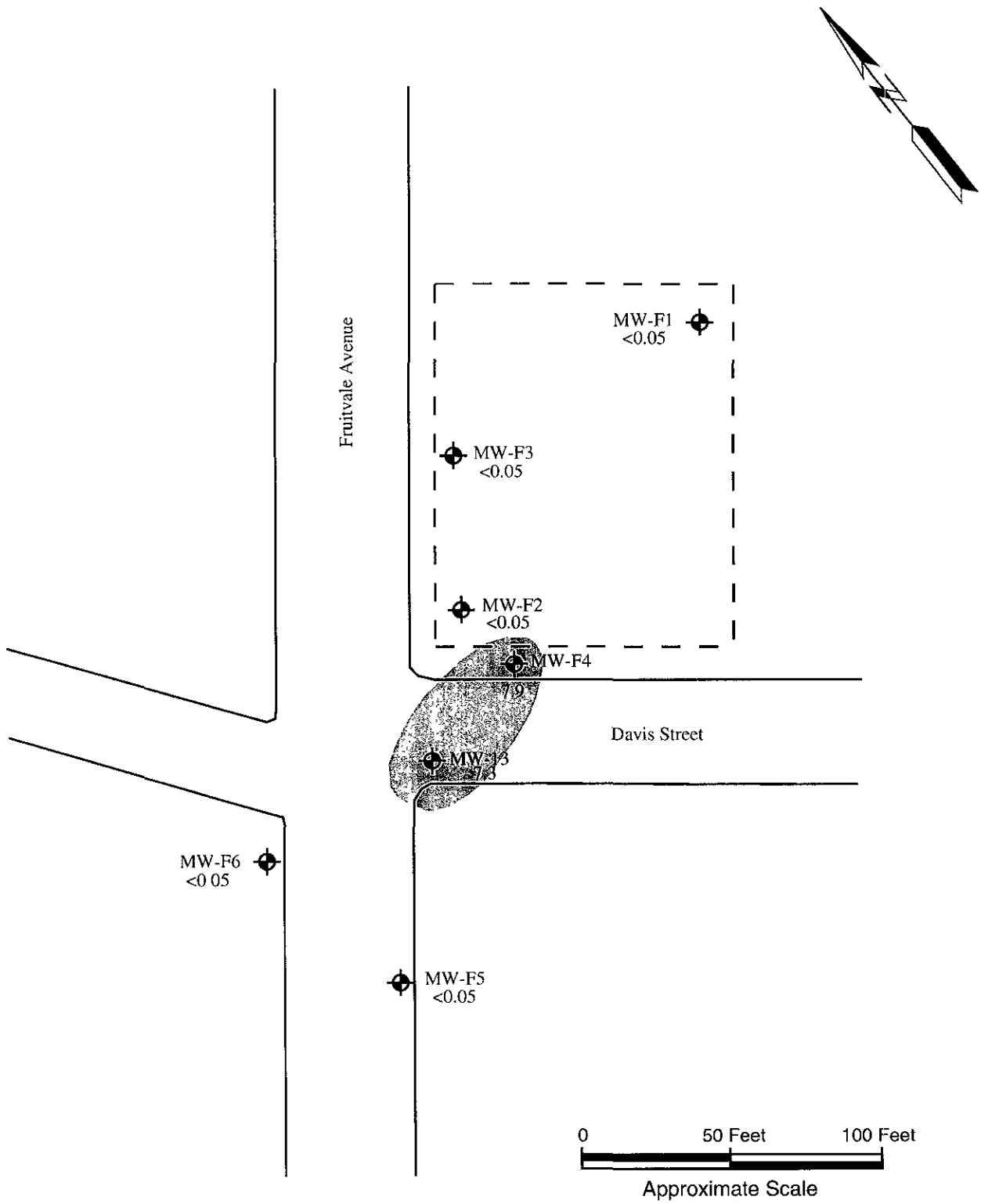
2662 Fruitvale Avenue
Oakland, California

CITY OF OAKLAND

ITSI

INNOVATIVE TECHNICAL SOLUTIONS, INC.

97-037/F 2-TPHg



Legend

- Approximate Location of Monitoring Wells
- 7.3 Concentration of TPHg in mg/L
- TPHg ≥ 0.1 mg/L
- TPHg ≥ 1 mg/L

Source: Modified from Figure 3, Groundwater Elevation Contour Map, 13 December 1996, BASELINE

FIGURE 2

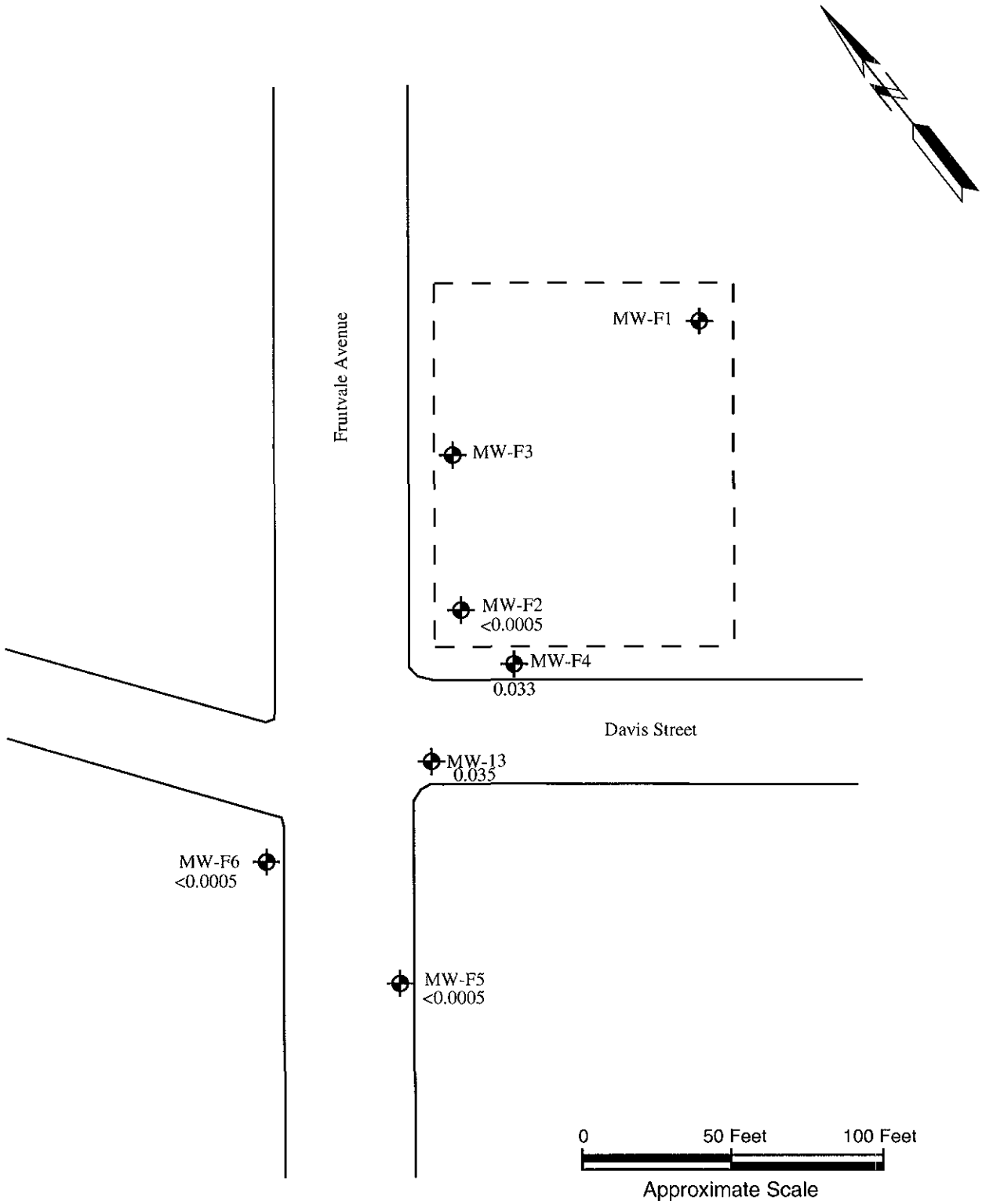
LABORATORY RESULTS FOR TPHg FOR SAMPLES COLLECTED ON JANUARY 21, 2000

2662 Fruitvale Avenue
Oakland, California

CITY OF OAKLAND

ITSI
INNOVATIVE TECHNICAL SOLUTIONS, INC.

97-037/F 3-Benzene



Legend

Approximate Location of Monitoring Wells

0.035 Concentration of benzene in mg/L

Benzene ≥ 0.001 mg/L

Benzene ≥ 0.01 mg/L

Source: Modified from Figure 3, Groundwater Elevation Contour Map, 13 December 1996, BASELINE

FIGURE 3

LABORATORY RESULTS FOR BENZENE FOR SAMPLES COLLECTED ON JANUARY 21, 2000

2662 Fruitvale Avenue
Oakland, California

CITY OF OAKLAND

ITSI
INNOVATIVE TECHNICAL SOLUTIONS, INC.

Figure 4a: Graph of Historical Concentrations of TPHg in MW-F4 and MW-13

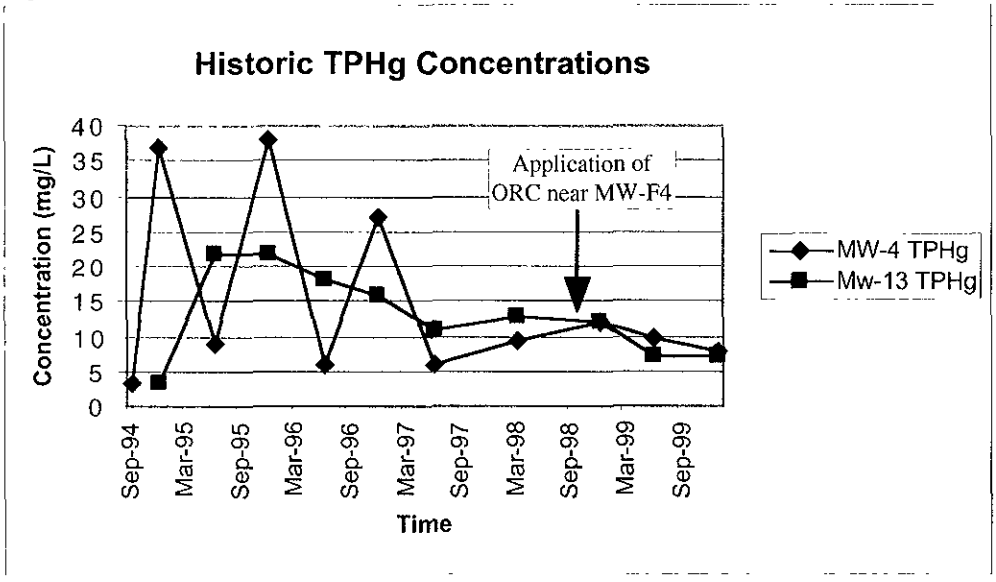


Figure 4b: Graph of Historical Concentrations of TPHg in MW-F4 and MW-13

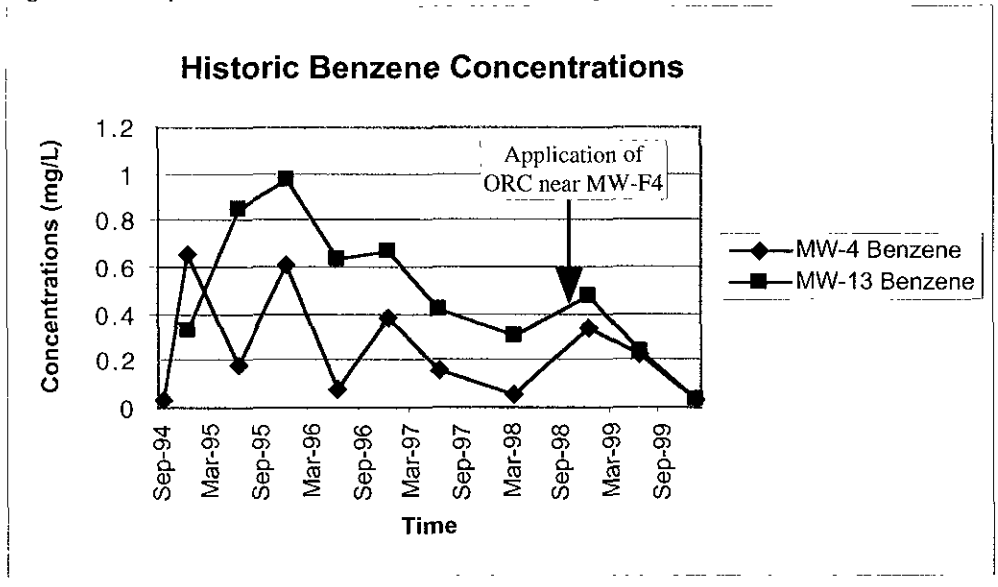


FIGURE 4

GRAPHS OF HISTORICAL CONCENTRATION TRENDS FOR TPHg AND BENZENE

2662 Fruitvale Avenue
Oakland, California

CITY OF OAKLAND

ITSI
INNOVATIVE TECHNICAL SOLUTIONS, INC.

APPENDIX A

COPY OF NOVEMBER 18, 1999 LETTER FROM ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9432

November 18, 1999
StID # 4457

Mr. Joseph Cotton
City of Oakland Environmental Services
250 Frank H. Ogawa Plaza, Suite 5301
Oakland CA 94612

Re: 2662 Fruitvale Ave., Oakland CA 94601

Dear Mr. Cotton:

Thank you for the submission of the Semi-Annual Groundwater Monitoring Report for the above referenced site. It appears that the petroleum hydrocarbon plume has migrated off-site and its limits are defined by monitoring well MW-F2 and wells, MW-F5 and MW-F6. Wells MW-F4 and MW-13, within the heart of the plume, exhibit the highest dissolved petroleum hydrocarbon concentrations.

It appears the effect of the October 1998 ORC injections may be waning. Our office agrees with the recommendation to continue the scheduled semi-annual monitoring, however, we suggest you consider an additional application of ORC. This may be done by introducing ORC socks into the two highest impacted wells or another slurry injection. You may also consider discontinuing the analysis for petroleum hydrocarbons on those wells, which historically have not shown contamination, ie wells MW-F1, MW-F2 and MW-F3. This assumes that free product is no longer present in MW-13.

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

C: B. Chan, files
Mr. J. Hess, ITSI, 1330 Broadway, Suite 1625, Oakland, CA 94612
Mon2662Fruitvale

APPENDIX B

COPIES OF MONITORING WELL PURGE AND SAMPLE FORMS

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Fruitvale Ave. PROJECT NO.: 97-037

WELL NO.: MW-F2 TESTED BY: AJ & CB DATE: 1/21/2000

Measuring Point Description: mark on TOC Static Water Level (ft.): ~~19.~~ 10.32

Total Well Depth (ft.): 19.95 Sample Method: peri pump & new tubing

Water Level Measurement Method: solinst interface probe Time Sampled: 1045

Purge Method: peristaltic pump + new tubing Sample Depth (ft.): ~15'

Time Start Purge: 1010 Field Filtering: Sol. Fe only

Time End Purge: 1040 Field Preservation: HCl (VOAs), H_2SO_4 (1-500 mL plastic)

Comments: HNO_3 (2-250 mL plastic)

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2 / 4 / 6			=	Casing Volume (gal)
	19.95	-	10.32	=	9.63	x	0.16	0.64	1.44	=	1.54 3 vols = 4.6

Time	1024	1030	1040				
Volume Purged (gals)	1.54	1.54	1.54				
Cumulative Volume Purged (gals)	1.54	3.08	4.6				
Cumulative Number of Casing Volumes	1	2	3				
Purge Rate (gpm)	0.11	0.15	0.15				
Temperature (F°) or (C°)	18.4	19.3	19.3				
pH	~~7.46~~ 6.60	6.69	6.69				
Specific Conductivity (µmhos/cm)	0.418	.440	.442				
Dissolved Oxygen (mg/L)	8.80	8.60	8.63				
~~Turbidity/Color (NTU)~~ ORP	180	60	121				
Odor	None	none	None				
Dewatered?	no	No	No				

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Fruitvale Ave. PROJECT NO.: 97-037

WELL NO.: MW-f4 TESTED BY: AF + CB DATE: 1/21/00

Measuring Point Description: mark on TOC

Total Well Depth (ft.): 16.91

Water Level Measurement Method: solinst interface probe

Purge Method: peristaltic pump + dedicated tubing

Time Start Purge: 1350

Time End Purge: 1416

Comments: color is

Static Water Level (ft.): 8.11

Sample Method: peri pump + dedicated tubing

Time Sampled: 1420

Sample Depth (ft.): ~10'

Field Filtering: for sol. Fe only

Field Preservation: HCl (40mL VOAs), HNO3 (2-250mL plastic), H2SO4 (1-1L plastic)

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	16.91		8.11		8.80		0.16	0.64	1.44		1.4 3vols = 4.22

Time	1358	HOL	1416				
Volume Purged (gals)	1.4	1.4	1.4				
Cumulative Volume Purged (gals)	1.4	2.8	4.2				
Cumulative Number of Casing Volumes	1	2	3				
Purge Rate (gpm)							
Temperature (F°) or (C°)	19.0	19.4	19.5				
pH	6.60	6.68	6.62				
Specific Conductivity (µmhos/cm)	0.716	0.702	0.700				
Dissolved Oxygen (mg/L)	9.38	9.25	9.19				
~~Turbidity/Color~~ (NTU) ORP (mV)	70	78	81				
Odor	yes						
Dewatered?	no						

ITSI Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Fruitvale Ave PROJECT NO.: 97-037

WELL NO.: MW-F5 TESTED BY: AL & CB DATE: 1/21/00

Measuring Point Description: Mark on TOC Static Water Level (ft.): 9.39

Total Well Depth (ft.): 24.40 Sample Method: peri pump & tubing

Water Level Measurement Method: solinst interface probe Time Sampled: 0925

Purge Method: peristaltic pump & dedicated tubing Sample Depth (ft.): ~12'

Time Start Purge: 0817 Field Filtering: .50 / field

Time End Purge: 0920 Field Preservation: yes

Comments:

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	24.40		9.39		15.01		0.16	0.64	1.44		2.40 3 x well vols = 7.20

Time	0840	0905	0920				
Volume Purged (gals)	2.40	~~2.4~~ 2.4	2.4				
Cumulative Volume Purged (gals)	2.40	4.8	7.2				
Cumulative Number of Casing Volumes	1	2	3				
Purge Rate (gpm)	0.04	0.09	0.11				
Temperature (F°) or (C°)	17.3	17.3	17.4				
pH	~~6.00~~ 6.00	6.57	6.60				
Specific Conductivity (~~µmhos~~ mS/cm)	0.475 m/cm	.467	.465				
Dissolved Oxygen (mg/L)	8.23	8.46	8.53				
~~Turbidity/Color (NTU)~~ ORP (mV)	207	199	189				
Odor	None	none	none				
Dewatered?	No	No	No				

of

Innovative Technical Solutions, Inc.

MONITORING WELL PURGE AND SAMPLE FORM

PROJECT NAME: Fruitvale Ave. PROJECT NO.: 97-037

WELL NO.: MW-F6 TESTED BY: AF & CB DATE: 1/21/2000

Measuring Point Description: mark on TOC Static Water Level (ft.): 9.37

Total Well Depth (ft.): 21.15 Sample Method: peristaltic pump + dedicated tubing

Water Level Measurement Method: Solinst interface probe Time Sampled: 1200

Purge Method: peristaltic pump and dedicated tubing Sample Depth (ft.): ~15'

Time Start Purge: 1027 Field Filtering: Sol. Iron only

Time End Purge: 1156 Field Preservation: HCl (40mL VOAs), H_2SO_4 (1x 500mL plast.

Comments: HNO_3 (2x 250mL plast.)

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2: 0.16; 4: 0.64; 6: 1.44	=	Casing Volume (gal)
	21.15	-	9.37	=	11.78	x		=	1.88 3vols = 5.6

Time	1136	1145	1156				
Volume Purged (gals)	1.88	~~3.76~~ 1.88 qp	~~5.64~~ 1.88				
Cumulative Volume Purged (gals)	1.88	3.76	5.6				
Cumulative Number of Casing Volumes	1	2	3				
Purge Rate (gpm)							
Temperature (F°) or (C°)	18.5	18.9	19.1				
pH	6.86	6.85	6.82				
Specific Conductivity (~~µmhos~~/cm)	0.401	0.438	0.418				
Dissolved Oxygen (mg/L)	9.17	9.01	9.17				
~~Turbidity/Color~~ (NTU) & ORP (mV)	142	180	196				
Odor	None	None	None				
Dewatered?	No	No	No				

Innovative Technical Solutions, Inc.

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: Fruitvale PROJECT NO.: 97-037

WELL NO.: MW-13 TESTED BY: AL & CB DATE: 1/21/00

Measuring Point Description: mark on TOC Static Water Level (ft.): 9.22

Total Well Depth (ft.): 23.25 Sample Method: peristaltic pump + dedicated tubing

Water Level Measurement Method: Solinst interface probe Time Sampled: 1330

Purge Method: peristaltic pump + ded. tubing Sample Depth (ft.): ~12'

Time Start Purge: 1240 Field Filtering: Sol. Fe only

Time End Purge: 1324 Field Preservation: HCl (40mL VOAs), H_2SO_4 (1500mL), HNO_3 (2x250mL plastic)

Comments: H. yellow color

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	23.25	-	9.22	=	14.03	x	0.16	0.64	1.44	=	2.24 3vols = 6.73

Time	1300	1313	1324				
Volume Purged (gals)	2.24	2.24	2.24				
Cumulative Volume Purged (gals)	2.24	4.48	6.73				
Cumulative Number of Casing Volumes	1	2	3				
Purge Rate (gpm)	0.112						
Temperature (F°) or (C°)	18.9	19.0	19.0				
pH	6.62	6.60	6.62				
Specific Conductivity (µmhos/cm)	0.738	0.751	0.751				
Dissolved Oxygen (mg/L)	9.26	9.19	9.15				
~~Turbidity/Color~~ (NTU) CB ORP mV	78	85	87				
Odor	yes	→	→				
Dewatered?	No	→	→				

APPENDIX C

COPIES OF LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORM FOR GROUNDWATER SAMPLES

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

Date: January 28, 2000

Innovative Technical Solutions, Inc
2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598-1627

Attn.: Ashley Foster

Project: 97-037
Fruitvale Ave.

Site: 2662 Fruitvale Ave.
Oakland, CA

Attached is our report for your samples received on Friday January 21, 2000
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 February 20, 2000 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: ssidhu@chromalab.com

Sincerely,

Surinder Sidhu

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

Gas/BTEX

Innovative Technical Solutions, Inc

2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598-1627

Attn: Ashley Foster

Phone: (925) 256-8898 Fax: (925) 256-8998

Project #: 97-037

Project: Fruitvale Ave.

Site: 2662 Fruitvale Ave.
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-F5	Water	01/21/2000 09:25	1
MW-F2	Water	01/21/2000 10:45	3
MW-F6	Water	01/21/2000 12:00	5
MW-13	Water	01/21/2000 13:30	7
MW-F4	Water	01/21/2000 14:20	9
DUPLICATE	Water	01/21/2000	11

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**MW-F5**	Lab Sample ID:	**2000-01-0325-001**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/26/2000 03:05
Sampled:	01/21/2000 09:25	QC-Batch:	2000/01/25-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	01/26/2000 03:05	
Benzene	ND	0.50	ug/L	1.00	01/26/2000 03:05	
Toluene	ND	0.50	ug/L	1.00	01/26/2000 03:05	
Ethyl benzene	ND	0.50	ug/L	1.00	01/26/2000 03:05	
Xylene(s)	ND	0.50	ug/L	1.00	01/26/2000 03:05	
Surrogate(s)						
4-Bromofluorobenzene	89.6	50-150	%	1.00	01/26/2000 03:05	
4-Bromofluorobenzene-FID	89.1	50-150	%	1.00	01/26/2000 03:05	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**MW-F2**	Lab Sample ID:	**2000-01-0325-003**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/26/2000 03:40
Sampled:	01/21/2000 10:45	QC-Batch:	2000/01/25-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	01/26/2000 03:40	
Benzene	ND	0.50	ug/L	1.00	01/26/2000 03:40	
Toluene	ND	0.50	ug/L	1.00	01/26/2000 03:40	
Ethyl benzene	ND	0.50	ug/L	1.00	01/26/2000 03:40	
Xylene(s)	ND	0.50	ug/L	1.00	01/26/2000 03:40	
Surrogate(s)						
4-Bromofluorobenzene	88.2	50-150	%	1.00	01/26/2000 03:40	
4-Bromofluorobenzene-FID	88.1	50-150	%	1.00	01/26/2000 03:40	

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**MW-F6**	Lab Sample ID:	**2000-01-0325-005**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/26/2000 04:14
Sampled:	01/21/2000 12:00	QC-Batch:	2000/01/25-01.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	01/26/2000 04:14	
Benzene	ND	0.50	ug/L	1.00	01/26/2000 04:14	
Toluene	ND	0.50	ug/L	1.00	01/26/2000 04:14	
Ethyl benzene	ND	0.50	ug/L	1.00	01/26/2000 04:14	
Xylene(s)	ND	0.50	ug/L	1.00	01/26/2000 04:14	
Surrogate(s)						
Trifluorotoluene	60.7	58-124	%	1.00	01/26/2000 04:14	
4-Bromofluorobenzene-FID	90.1	50-150	%	1.00	01/26/2000 04:14	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**MW-13**	Lab Sample ID:	**2000-01-0325-007**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/26/2000 14:15
Sampled:	01/21/2000 13:30	QC-Batch:	2000/01/26-05.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	7300	500	ug/L	10.00	01/26/2000 14:15	
Benzene	35	5.0	ug/L	10.00	01/26/2000 14:15	
Toluene	ND	5.0	ug/L	10.00	01/26/2000 14:15	
Ethyl benzene	620	5.0	ug/L	10.00	01/26/2000 14:15	
Xylene(s)	220	5.0	ug/L	10.00	01/26/2000 14:15	
Surrogate(s)						
4-Bromofluorobenzene	99.0	50-150	%	1.00	01/26/2000 14:15	
4-Bromofluorobenzene-FID	101.0	50-150	%	1.00	01/26/2000 14:15	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**MW-F4**	Lab Sample ID:	**2000-01-0325-009**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/26/2000 14:49
Sampled:	01/21/2000 14:20	QC-Batch:	2000/01/26-05.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	7900	500	ug/L	10.00	01/26/2000 14:49	
Benzene	33	5.0	ug/L	10.00	01/26/2000 14:49	
Toluene	ND	5.0	ug/L	10.00	01/26/2000 14:49	
Ethyl benzene	1000	5.0	ug/L	10.00	01/26/2000 14:49	
Xylene(s)	250	5.0	ug/L	10.00	01/26/2000 14:49	
Surrogate(s)						
Trifluorotoluene	91.2	58-124	%	1.00	01/26/2000 14:49	
4-Bromofluorobenzene-FID	99.4	50-150	%	1.00	01/26/2000 14:49	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX

Sample ID:	**DUPLICATE**	Lab Sample ID:	**2000-01-0325-011**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/26/2000 15:24
Sampled:	01/21/2000	QC-Batch:	2000/01/26-05.05
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	6500	500	ug/L	10.00	01/26/2000 15:24	
Benzene	22	5.0	ug/L	10.00	01/26/2000 15:24	
Toluene	ND	5.0	ug/L	10.00	01/26/2000 15:24	
Ethyl benzene	980	5.0	ug/L	10.00	01/26/2000 15:24	
Xylene(s)	300	5.0	ug/L	10.00	01/26/2000 15:24	
Surrogate(s)						
Trifluorotoluene	81.0	58-124	%	1.00	01/26/2000 15:24	
4-Bromofluorobenzene-FID	92.9	50-150	%	1.00	01/26/2000 15:24	

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report

Gas/BTEX

Method Blank | **Water** | **QC Batch # 2000/01/25-01.05**

MB: 2000/01/25-01.05-001

Date Extracted: 01/25/2000 12:49

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	01/25/2000 12:49	
Benzene	ND	0.5	ug/L	01/25/2000 12:49	
Toluene	ND	0.5	ug/L	01/25/2000 12:49	
Ethyl benzene	ND	0.5	ug/L	01/25/2000 12:49	
Xylene(s)	ND	0.5	ug/L	01/25/2000 12:49	
Surrogate(s)					
4-Bromofluorobenzene	83.8	50-150	%	01/25/2000 12:49	
Trifluorotoluene	58.8	58-124	%	01/25/2000 12:49	
4-Bromofluorobenzene-FID	76.2	50-150	%	01/25/2000 12:49	

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report

Gas/BTEX

Method Blank | **Soil** | **QC Batch # 2000/01/26-05.05**

MB: 2000/01/26-05.05-001

Date Extracted: 01/26/2000 12:06

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Benzene	ND	5.0	%	01/26/2000 12:06	
Surrogate(s)					
4-Bromofluorobenzene	81.0	50-150	%	01/26/2000 12:06	

To: **Innovative Technical Solutions, Inc**

Attn: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2000/01/25-01.05**

LCS: 2000/01/25-01.05-002 Extracted: 01/25/2000 13:31 Analyzed: 01/25/2000 13:31

LCSD: 2000/01/25-01.05-003 Extracted: 01/25/2000 14:05 Analyzed: 01/25/2000 14:05

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	477	484	500	500	95.4	96.8	1.5	75-125	20		
Benzene	98.3	101	100.0	100.0	98.3	101.0	2.7	77-123	20		
Toluene	93.9	93.9	100.0	100.0	93.9	93.9	0.0	78-122	20		
Ethyl benzene	95.3	94.6	100.0	100.0	95.3	94.6	0.7	70-130	20		
Xylene(s)	281	278	300	300	93.7	92.7	1.1	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene	463	474	500	500	92.6	94.8		50-150			
Trifluorotoluene	464	464	500	500	92.8	92.8		58-124			
4-Bromofluorobenzene-FI	403	409	500	500	80.6	81.8		50-150			

To: **Innovative Technical Solutions, Inc**

Attn: Ashley Foster

Test Method: 8020
8015M

Prep Method: 5030

Batch QC Report

Gas/BTEX

Laboratory Control Spike (LCS/LCSD) **Soil** **QC Batch # 2000/01/26-05.05**

LCS: 2000/01/26-05.05-002 Extracted: 01/26/2000 09:12 Analyzed: 01/26/2000 09:12

LCSD: 2000/01/26-05.05-003 Extracted: 01/26/2000 09:46 Analyzed: 01/26/2000 09:46

Compound	Conc.	[%]	Exp.Conc.	[%]	Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Benzene	498	487	500	500	99.6	97.4	2.2	77-123	20		
Surrogate(s)											
Trifluorotoluene	475	447	500	500	95.0	89.4		58-124			

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

Metals

Innovative Technical Solutions, Inc

2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598-1627

Attn: Ashley Foster

Phone: (925) 256-8898 Fax: (925) 256-8998

Project #: 97-037

Project: Fruitvale Ave.

Site: 2662 Fruitvale Ave.
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-F5	Water	01/21/2000 09:25	1
MW-F2	Water	01/21/2000 10:45	3
MW-F6	Water	01/21/2000 12:00	5
MW-13	Water	01/21/2000 13:30	7
MW-F4	Water	01/21/2000 14:20	9

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 6010B

Prep Method: 3010A

Metals

Sample ID:	**MW-F5**	Lab Sample ID:	**2000-01-0325-001**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/24/2000 07:26
Sampled:	01/21/2000 09:25	QC-Batch:	2000/01/24-01.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	0.14	0.10	mg/L	1.00	01/24/2000 13:02	

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 6010B

Prep Method: 3010A

Metals

Sample ID:	**MW-F2**	Lab Sample ID:	**2000-01-0325-003**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:46
Sampled:	01/21/2000 10:45	QC-Batch:	2000/01/25-04.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	ND	0.10	mg/L	1.00	01/25/2000 18:46	

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 6010B

Prep Method: 3010A

Metals

Sample ID:	**MW-F6**	Lab Sample ID:	**2000-01-0325-005**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:46
Sampled:	01/21/2000 12:00	QC-Batch:	2000/01/25-04.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	0.11	0.10	mg/L	1.00	01/25/2000 18:49	

To: **Innovative Technical Solutions, Inc**
Attn.: Ashley Foster

Test Method: 6010B
Prep Method: 3010A

Metals

Sample ID:	**MW-13**	Lab Sample ID:	**2000-01-0325-007**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:46
Sampled:	01/21/2000 13:30	QC-Batch:	2000/01/25-04.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	7.3	0.10	mg/L	1.00	01/25/2000 18:53	

To: **Innovative Technical Solutions, Inc**
Attn.: Ashley Foster

Test Method: 6010B
Prep Method: 3010A

Metals

Sample ID:	**MW-F4**	Lab Sample ID:	**2000-01-0325-009**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:46
Sampled:	01/21/2000 14:20	QC-Batch:	2000/01/25-04.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	13	0.10	mg/L	1.00	01/25/2000 18:56	

To: **Innovative Technical Solutions, Inc**
Attn.: Ashley Foster

Test Method: 6010B
Prep Method: 3010A

Batch QC Report
Metals

Method Blank	**Water**	**QC Batch # 2000/01/24-01.15**
MB: 2000/01/24-01.15-028		Date Extracted: 01/24/2000 07:26

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Iron	ND	0.10	mg/L	01/24/2000 11:13	

To: **Innovative Technical Solutions, Inc**
Attn.: Ashley Foster

Test Method: 6010B
Prep Method: 3010A

Batch QC Report
Metals

Method Blank | **Water** | **QC Batch # 2000/01/25-04.15**

MB: 2000/01/25-04.15-024

Date Extracted: 01/25/2000 12:46

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Iron	ND	0.10	mg/L	01/25/2000 18:35	

To: **Innovative Technical Solutions, Inc**

Attn: Ashley Foster

Test Method: 6010B

Prep Method: 3010A

Batch QC Report

Metals

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2000/01/24-01.15**

LCS: 2000/01/24-01.15-029 Extracted: 01/24/2000 07:26 Analyzed: 01/24/2000 11:17

LCSD: 2000/01/24-01.15-030 Extracted: 01/24/2000 07:26 Analyzed: 01/24/2000 11:21

Compound	Conc. [mg/L]		Exp.Conc. [mg/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Iron	4.87	4.84	5.00	5.00	97.4	96.8	0.6	80-120	20		

To: **Innovative Technical Solutions, Inc**

Attn: Ashley Foster

Test Method: 6010B

Prep Method: 3010A

Batch QC Report

Metals

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2000/01/25-04.15**

LCS: 2000/01/25-04.15-025 Extracted: 01/25/2000 12:46 Analyzed: 01/25/2000 18:39

LCSD: 2000/01/25-04.15-026 Extracted: 01/25/2000 12:46 Analyzed: 01/25/2000 18:42

Compound	Conc. [mg/L]		Exp.Conc. [mg/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Iron	4.45	4.55	5.00	5.00	89.0	91.0	2.2	80-120	20		

Soluble Metals

Innovative Technical Solutions, Inc

2855 Mitchell Drive, Suite 111
Walnut Creek, CA 94598-1627

Attn: Ashley Foster

Phone: (925) 256-8898 Fax: (925) 256-8998

Project #: 97-037

Project: Fruitvale Ave.

Site: 2662 Fruitvale Ave.
Oakland, CA

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-F5 (SOLUBLE)	Water	01/21/2000 09:25	2
MW-F2 (SOLUBLE)	Water	01/21/2000 10:45	4
MW-F6 (SOLUBLE)	Water	01/21/2000 12:00	6
MW-13 (SOLUBLE)	Water	01/21/2000 13:30	8
MW-F4 (SOLUBLE)	Water	01/21/2000 14:20	10

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 6010B

Prep Method: 3005A

Soluble Metals

Sample ID:	**MW-F5 (SOLUBLE)**	Lab Sample ID:	**2000-01-0325-002**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:43
Sampled:	01/21/2000 09:25	QC-Batch:	2000/01/25-03.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	ND	0.10	mg/L	1.00	01/25/2000 17:31	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-01-0325

To: **Innovative Technical Solutions, Inc**
Attn.: Ashley Foster

Test Method: 6010B
Prep Method: 3005A

Soluble Metals

Sample ID:	**MW-F2 (SOLUBLE)**	Lab Sample ID:	**2000-01-0325-004**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:43
Sampled:	01/21/2000 10:45	QC-Batch:	2000/01/25-03.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	ND	0.10	mg/L	1.00	01/25/2000 17:34	

To: **Innovative Technical Solutions, Inc**
Attn.: Ashley Foster

Test Method: 6010B
Prep Method: 3005A

Soluble Metals

Sample ID:	**MW-F6 (SOLUBLE)**	Lab Sample ID:	**2000-01-0325-006**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:43
Sampled:	01/21/2000 12:00	QC-Batch:	2000/01/25-03.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	ND	0.10	mg/L	1.00	01/25/2000 17:38	

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 6010B

Prep Method: 3005A

Soluble Metals

Sample ID:	**MW-13 (SOLUBLE)**	Lab Sample ID:	**2000-01-0325-008**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:43
Sampled:	01/21/2000 13:30	QC-Batch:	2000/01/25-03.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	6.9	0.10	mg/L	1.00	01/25/2000 17:42	

To: **Innovative Technical Solutions, Inc**

Attn.: Ashley Foster

Test Method: 6010B

Prep Method: 3005A

Soluble Metals

Sample ID:	**MW-F4 (SOLUBLE)**	Lab Sample ID:	**2000-01-0325-010**
Project:	97-037 Fruitvale Ave.	Received:	01/21/2000 16:00
Site:	2662 Fruitvale Ave. Oakland, CA	Extracted:	01/25/2000 12:43
Sampled:	01/21/2000 14:20	QC-Batch:	2000/01/25-03.15
Matrix:	Water		

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Iron	2.7	0.10	mg/L	1.00	01/25/2000 17:46	

To: **Innovative Technical Solutions, Inc**
Attn.: Ashley Foster

Test Method: 6010B
Prep Method: 3005A

Batch QC Report
Soluble Metals

Method Blank **Water** **QC Batch # 2000/01/25-03.15**

MB: 2000/01/25-03.15-009 Date Extracted: 01/25/2000 12:43

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Iron	ND	0.10	mg/L	01/25/2000 17:19	

To: **Innovative Technical Solutions, Inc**

Attn: Ashley Foster

Test Method: 6010B

Prep Method: 3005A

Batch QC Report

Soluble Metals

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2000/01/25-03.15**

LCS: 2000/01/25-03.15-010 Extracted: 01/25/2000 12:43 Analyzed: 01/25/2000 17:23

LCSD: 2000/01/25-03.15-011 Extracted: 01/25/2000 12:43 Analyzed: 01/25/2000 17:27

Compound	Conc. [mg/L]		Exp.Conc. [mg/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Iron	4.55	4.44	5.00	5.00	91.0	88.8	2.4	80-120	20		

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

CERTIFICATE OF ANALYSIS

eport # L024-05

Date: 1/27/00

Chromalab
220 Quarry Lane
leasanton CA 94566-4756

Project: 2000-01-0325

PO#

Date Rec'd: 1/24/00
Date Started: 1/24/00
Date Completed: 1/24/00

Date Sampled: 1/21/00
Time:
Sampler:

Sample ID	Lab ID	MDL	Method	Analyte	Results	Units
MW-F5	L30737	0.2	300	Nitrate + Nitrite as N	5.2	mg/L
		1.0	300	Sulfate	42	mg/L
MW-F2	L30738	0.2	300	Nitrate + Nitrite as N	ND	mg/L
		1.0	300	Sulfate	9	mg/L
MW-F6	L30739	0.2	300	Nitrate + Nitrite as N	0.5	mg/L
		1.0	300	Sulfate	42	mg/L
MW-13	L30740	0.2	300	Nitrate + Nitrite as N	ND	mg/L
		1.0	300	Sulfate	ND	mg/L
MW-F4	L30741	0.2	300	Nitrate + Nitrite as N	ND	mg/L
		1.0	300	Sulfate	ND	mg/L

Ramiro Salgado
Chemist

Certification # 1157

Donna Keller
Laboratory Director

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue Modesto, CA 95351 Phone (209) 572-0900 Fax (209) 572-0916

Report# L024-05

QC REPORT

Chromalab
220 Quarry Lane
leasanton CA 94566-4756

Dates Analyzed 1/24/00

Analyte	Batch #	Method	MS % Recovery	MSD % Recovery	RPD	Blank
Nitrate + Nitrite as N	I00385	300	98.0	98.0	0.0	ND
Sulfate	I00387	300	112.0	114.0	1.8	ND

Ramiro Salgado
Chemist

Certification # 1157

Donna Keller
Laboratory Director

Chain of Custody 2000-01-0325-1

Date Shipped: 01/24/2000

L024-05

From:

ChromaLab, Inc. (CL)
1220 Quarry Lane
Pleasanton, CA 94566-4756

Project Manager: Surinder Sidhu
Phone: Ext:
Fax: (925) 484-1096
Email: ssidhu@chromalab.com

To:

GeoAnalytical Labs
1405 Kansas Avenue
Modesto, CA 95351

Phone: (209) 572-0900
Fax: (209) 572-0916
Contact: Ramiro Salgado
Phone: (209) 572-0900

CL Submission #: **2000-01-0325**
CL PO #:

Project #: 97-037
Project Name: Fruitvale Ave.

Client Sample ID / Analysis	CL#	Sampled	Matrix / Method	Due
MW-F5	001	01/21/2000 09:25	Water	
Subcontract - Nitrate + Nitrite	L30737		300.0/354.1+352.1	01/31/2000 17:00
Subcontract - Sulfate			300/375.4	01/31/2000 17:00
MW-F2	003	01/21/2000 10:45	Water	
Subcontract - Nitrate + Nitrite	L30738		300.0/354.1+352.1	01/31/2000 17:00
Subcontract - Sulfate			300/375.4	01/31/2000 17:00
MW-F6	005	01/21/2000 12:00	Water	
Subcontract - Nitrate + Nitrite	L30739		300.0/354.1+352.1	01/31/2000 17:00
Subcontract - Sulfate			300/375.4	01/31/2000 17:00
MW-13	007	01/21/2000 13:30	Water	
Subcontract - Nitrate + Nitrite	L30740		300.0/354.1+352.1	01/31/2000 17:00
Subcontract - Sulfate			300/375.4	01/31/2000 17:00
MW-F4	009	01/21/2000 14:20	Water	
Subcontract - Nitrate + Nitrite	L30741		300.0/354.1+352.1	01/31/2000 17:00
Subcontract - Sulfate			300/375.4	01/31/2000 17:00

	1.	2.	3.
RELINQUISHED BY:	[signature]		
Signature / Time	11:35		
Printed Name / Date	Chris Rodley 01/24/00		
Company	Chromalab		
RECEIVED BY:	[signature]		
Signature / Time	11:35		
Printed Name / Date	Linda Vidrean 1/24/00		
Company	Geo Analytical Lab		

Innovative Technical Solutions, Inc.

2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 (Tel), (925) 256-8998 (Fax)

CHAIN-OF-CUSTODY

PROJECT NAME: Fruitvale Ave. | LABORATORY NAME: Chromalab | DATE: 1/21/2000
PROJECT NUMBER: 97-037 | ADDRESS: 1220 Quarry Lane, Pleasanton, CA | PAGE: 1 of 2
SITE LOCATION: 2662 Fruitvale Ave, Oakland CA | CONTACT/PHONE NO.: Surinder Sidhu

SAMPLE I.D.	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	ANALYSIS: TPHg	BTEX	total Fe	sol. Fe (filtered)	Sulfate	Nitrate (by 353.2)	SPECIAL INSTRUCTIONS/COMMENTS	TOTAL NUMBER OF ANALYSES
MW-F5	~12'	1/21/00	0925	3	40mL VOA	H_2O	1	1						3
				2	250mL plastic				1	1				2
				1	500mL plastic						1			1
				1	500mL plastic							1		1
MW-F2	~15'		1045	3	40mL VOA		1	1						3
				2	250mL plastic				1	1				2
				1	500mL plastic						1			1
				1	500mL plastic							1		1
MW-F6	~15'		1200	3	40mL VOA		1	1						3
				2	250mL plastic				1	1				2
				1	500mL plastic						1			1
				1	500mL plastic							1		1
TOTAL NUMBER OF CONTAINERS					TOTAL TESTS		3	3	3	3	3	3		18

SAMPLED BY: Ashley Foster
SIGNATURE:

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: Ashley Foster (Printed Name) (Signature)
ITSI (Company) 1/21/00 (Date and Time)

RELINQUISHED BY: (Printed Name) (Signature)
(Company) (Date and Time)

RELINQUISHED BY: (Printed Name) (Signature)
(Company) (Date and Time)

RECEIVED BY: (Printed Name) (Signature)
(Company) (Date and Time)

RECEIVED BY: (Printed Name) (Signature)
(Company) (Date and Time)

RECEIVED BY: D. Harrington Denise Harrington (Printed Name) (Signature)
CL 1/21/00 @ 1600 (Company) (Date and Time)

SEND RESULTS TO: Ashley Foster 2855 Mitchell Dr. Ste 111 Walnut Creek, CA 94598

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 (Tel), (925) 256-8998 (Fax)

CHAIN-OF-CUSTODY

PROJECT NAME: Fruitvale Ave. | LABORATORY NAME: Chromalab | DATE: 1/21/00
PROJECT NUMBER: 97-037 | ADDRESS: 1220 Quarry Lane, Pleasanton, CA | PAGE 2 of 2
SITE LOCATION: 2662 Fruitvale Ave, Oakland CA | CONTACT/PHONE NO.: Swinder Sidhu

SAMPLE I.D.	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	ANALYSIS: TPH$_g$	BTEX	total Fe	sol. Fe (filtered)	Sulfate	Nitrate (by Method Nitrite 353.2)	SPECIAL INSTRUCTIONS/COMMENTS	TOTAL NUMBER OF ANALYSES
MW-13	~12'	1/21/00	1330	3	40mL VOAs	H_2O	1	1						2
				2	250mL poly				1	1				2
				1	500mL plastic						1			1
				1	500mL plastic							1		1
MW-14	~10'		1420	3	40mL VOAs		1	1						2
				2	250mL plastic				1	1				2
				1	500mL plastic						1			1
				1	500mL plastic							1		1
Duplicate	N/A	N/A	N/A	3	40mL VOAs	V	1	1						2
not used														
TOTAL NUMBER OF CONTAINERS				17	TOTAL TESTS		3	3	1	2	2	2		14

SAMPLED BY: Ashley Foster
SIGNATURE:

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: Ashley Foster — Printed Name / Signature
ITSI — 1/21/00 1600 — Company / Date and Time

RECEIVED BY: — Printed Name / Signature
Company / Date and Time

RELINQUISHED BY: — Printed Name / Signature
Company / Date and Time

RECEIVED BY: — Printed Name / Signature
Company / Date and Time

RELINQUISHED BY: — Printed Name / Signature
Company / Date and Time

RECEIVED BY: D. Harrington Denise Harrington — Printed Name / Signature
CL 1/21/00 @1600 — Company / Date and Time

SEND RESULTS TO: Ashley Foster 2855 Mitchell Dr. Ste 111 Walnut Creek, CA 94598

Innovative Technical Solutions, Inc.
2855 Mitchell Drive, Suite 111
Walnut Creek, California 94598
(925) 256-8898 (Tel), (925) 256-8998 (Fax)

2000-01-0325

CHAIN-OF-CUSTODY

PROJECT NAME: Fruitvale Ave.
PROJECT NUMBER: 97-037
SITE LOCATION: 2662 Fruitvale Ave., Oakland CA

LABORATORY NAME: Chromalab
ADDRESS: 1220 Quarry Lane, Pleasanton, CA
CONTACT/PHONE NO.: Suvinder Sidhu

DATE: 1/21/00
PAGE 2 of 2

SAMPLE I.D.	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	ANALYSIS: TPH$_g$	BTEX	total fe	sol. Fe (filtered)	Sulfate	Nitrate (by Nitrate/Nitrite 353.2)	SPECIAL INSTRUCTIONS/COMMENTS	TOTAL NUMBER OF ANALYSES
MW-13	~12'	1/21/00	1330	3	40mL VOAs	H_2O	1	1						2
				2	250mL plastic				1	1				2
				1	500mL plastic						1			1
				1	500mL plastic							1		1
MW-14	~10'		1420	3	40mL VOAs		1	1						2
				2	250mL plastic				1	1				2
				1	500mL plastic						1			1
				1	500mL plastic							1		1
Duplicate	N/A	N/A	N/A	3	40mL VOAs		1	1						2
Not used														
TOTAL NUMBER OF CONTAINERS				17	TOTAL TESTS		3	3	1	2	2	2		14

SAMPLED BY: Ashley Foster
SIGNATURE:

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: Ashley Foster _____
Printed Name Signature
ITSI 1/21/00 1600
Company Date and Time

RECEIVED BY: _____
Printed Name Signature
_____
Company Date and Time

RELINQUISHED BY: _____
Printed Name Signature
_____
Company Date and Time

RECEIVED BY: _____
Printed Name Signature
_____
Company Date and Time

RELINQUISHED BY: _____
Printed Name Signature
_____
Company Date and Time

RECEIVED BY: D. Harrington Denise Harrington
Printed Name Signature
CL 1/21/00 @1600
Company Date and Time

SEND RESULTS TO: Ashley Foster 2855 Mitchell Dr. Ste 111 Walnut Creek, CA 94598