CITY OF OAKLAND

ENVIRONMENTAL SERVICES • 1333 BROADWAY, SUITE 330A • OAKLAND, CALIFORNIA 94612

Public Works Agency

(510) 238-6688
FAX (510) 238-7286
TDD (510) 238-7644

September 10, 1997

Mr. Barney Chan
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Semi-Annual Groundwater Monitoring Results-June 1997
2662 Fruitvale Avenue, Oakland, California

Dear Mr. Chan:

Attached is the *Semi-Annual Groundwater Monitoring Report-June 1997 for 2662 Fruitvale Avenue Oakland, California.* This report was prepared by Innovative Technical Solutions Incorporated of Oakland on behalf of the City of Oakland Environmental Services Division.

Should you have any questions or require additional information regarding this report , please do not hesitate to contact me at (510) 238-6259.

Sincerely,

Joseph A. Cotton
Environmental Program Specialist

2662GW.COV
09-10-97

INNOVATIVE TECHNICAL SOLUTIONS, Inc.

94304

ITSI

September 25, 1997

Mr. Joseph Cotton
City of Oakland
Environmental Services
1333 Broadway, Suite 330
Oakland, CA 94612

97 OCT -2 PM 3:06

Results of Semi-Annual Groundwater Monitoring on June 26, 1997
2662 Fruitvale Avenue
Oakland, California

Dear Mr. Cotton:

Innovative Technical Solutions, Inc. (ITSI) is pleased to provide the results of semi-annual groundwater monitoring performed on June 26, 1997 at the property located at 2662 Fruitvale Avenue in Oakland. The semi-annual groundwater monitoring included the monitoring and sampling of seven monitoring wells, MW-F1, MW-F2, MW-F3, 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.

The purpose of this groundwater monitoring program is to identify changes in shallow groundwater quality at the site over time, including evaluation of groundwater conditions that affect the activity of intrinsic bioremediation of petroleum hydrocarbons.

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 A.

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,

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

conductivity, temperature and dissolved oxygen 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. 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 602
- Sulfate, nitrate, and total and soluble iron.

RESULTS

Groundwater elevations and 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 B.

Depth to groundwater averaged around 11 to 12 feet below ground surface (bgs). Groundwater flow direction was generally towards the west (ranging from west-northwest to west-southwest), at a gradient ranging from approximately 0.015 to 0.03 feet per feet. The groundwater flow direction is consistent with groundwater flow directions from previous monitoring events.

As shown in Table 1, floating product was observed in one monitoring well, MW-13, at a thickness of 0.02 feet. Floating product was not observed in the other six wells monitored and sampled.

Petroleum Hydrocarbons

TPHg was reportedly detected in samples from two of the seven monitoring wells, MW-F4 and MW-13, at concentrations of 6.2 and 11 mg/L, respectively. TPHg was reportedly not detected (at a detection limit of 0.05 mg/L) in the other five monitoring wells sampled.

Benzene was reportedly detected in samples from three of the monitoring wells sampled, MW-F4, MW-F5, and MW-F13, at concentrations of 0.16, 0.0032, and 0.42 mg/L, respectively. Each of these concentrations exceed the Maximum Contaminant Level (MCL) for benzene of 0.001 mg/L. Benzene was reportedly not detected (at a detection limit of 0.0005 mg/L) in the other four monitoring wells sampled. Toluene, ethylbenzene, and xylenes were reportedly detected in samples from the same three monitoring wells as benzene.

Intrinsic Bioremediation Indicator Compounds

Soluble iron, representative of ferrous iron (Fe^{2+}) content, was reportedly detected in four of the seven wells sampled, MW-F3, MW-F4, MW-F6 and MW-F13, at concentrations up to 6.9 mg/L. The highest concentrations of soluble iron were reported in the two monitoring wells MW-F4 and MW-F13 which correspond to the highest reported concentrations of TPHg and BTEX compounds.

Sulfate was reportedly detected in each of the monitoring wells sampled, at concentrations ranging from 0.2 to 47 mg/L. The lowest concentrations of sulfate were reported in two monitoring wells, MW-F4 and MW-F13, which also correspond to the highest reported concentrations of TPHg and BTEX compounds.

Dissolved oxygen, as monitored in the field during purging of the monitoring wells, was relatively high in MW-F1 (3.8 mg/L), and ranged from 1.3 to 2.1 mg/L in the remaining wells monitored.

DISCUSSION

Floating product was observed in a monitoring well MW-13 downgradient of the site. Floating product has been reported in MW-13 during previous monitoring events. High 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 also consistent with previous monitoring events.

The extent of the plume appears relatively limited. TPHg was not reported in MW-F5 and MW-F6, downgradient of MW-13, and BTEX were not reported in MW-F6. However, low levels of BTEX were reported in MW-F5. Previous sporadic detection of TPHg (June 1995) and xylenes (December 1996) indicate that MW-F5 is located near the downgradient margin of the plume.

Continued water quality monitoring of MW-F5 and MW-F6 should be performed to evaluate potential changes in water quality in these downgradient wells.

Intrinsic bioremediation indicator parameters reveal a pattern generally supportive of active biodegredation at the site. Specifically, electron receptor sulfate is lowest in the wells with the highest concentrations of TPHg (MW-F4 and MW-13), and soluble (ferrous) iron is highest in these same wells.

Continued semi-annual water quality monitoring of MW-F2 through MW-F6 and MW-13 is recommended for this site to monitor the extent of the groundwater plume and effects of intrinsic bioremediation on the plume.

Please give me a call 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 LEVELS MEASURED ON JUNE 26, 1997
2662 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

Monitoring Well ID	Casing Elevation[1]	Date Measured	Depth to Product	Depth to Groundwater	Groundwater Elevation
MW-F1	104.41	6/26/97	-	11.23	93.18
MW-F2	102.22	6/26/97	-	11.96	90.26
MW-F3	102.42	6/26/97	-	11.85	90.57
MW-F4	101.56	6/26/97	-	10.94	90.62
MW-F5	100.32	6/26/97	-	11.61	88.71
MW-F6	100.11	6/26/97	-	11.35	88.76
MW-13	101.20	6/26/97	11.74	11.76	89.44

[1] From Table 3, Groundwater Elevation and Gradient Determination Data, February 7, 1997, BASELINE.

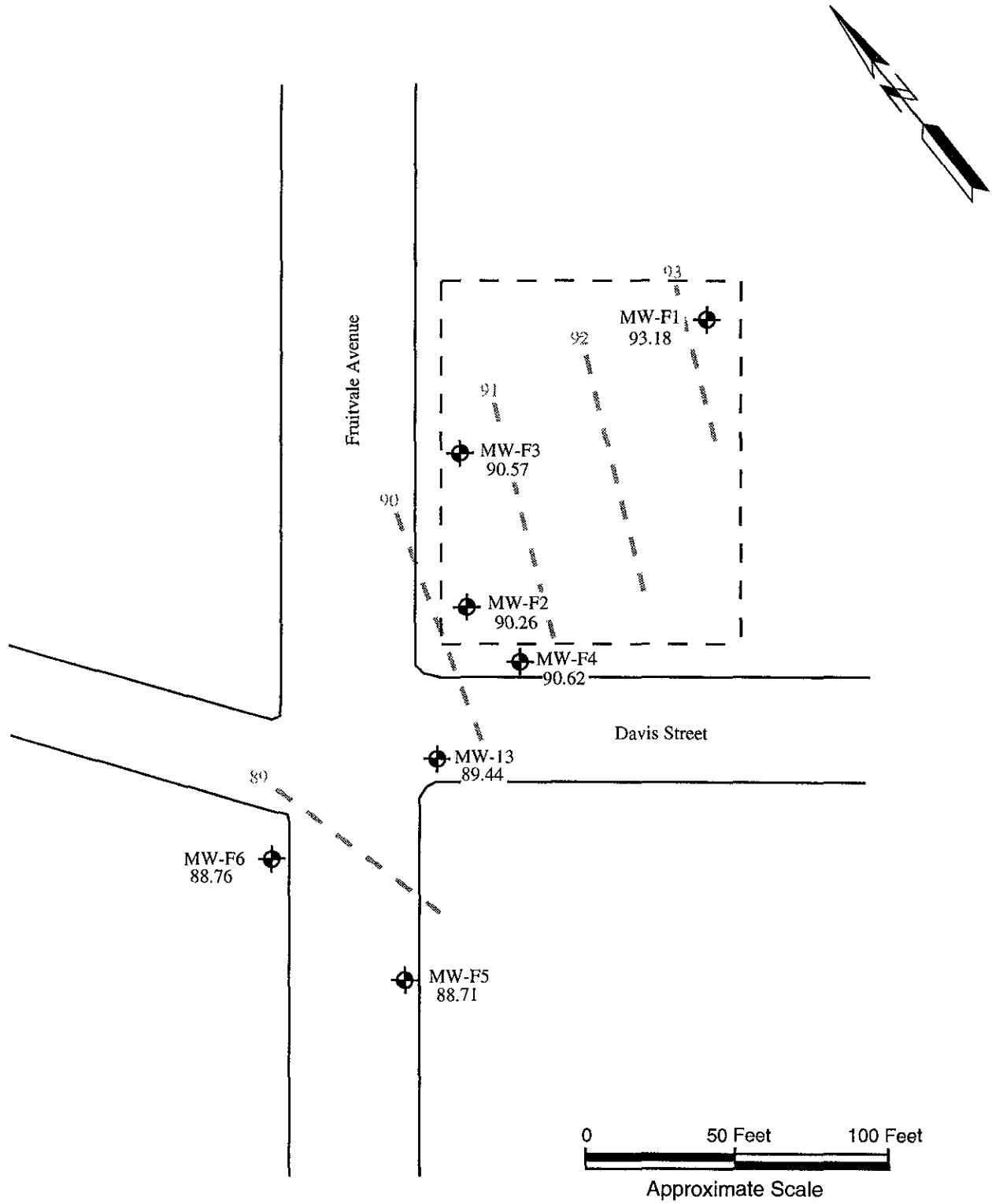
TABLE 2

LABORATORY RESULTS FOR GROUNDWATER SAMPLES COLLECTED ON JUNE 26, 1997
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)
MW-F1	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.1**	<0.1	**7.7**	**38**
MW-F2	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.1**	<0.1	<0.05	**7.4**
MW-F3	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.46**	**0.16**	**0.70**	**23**
MW-F4	6/26/97	**6.2**	**0.16**	**0.018**	**0.71**	**0.32**	**2.4**	**3.1**	<0.05	**0.2**
MW-F5	6/26/97	<0.05	**0.0032**	**0.0064**	**0.00073**	**0.0042**	**0.21**	<0.1	**6.1**	**45**
MW-F6	6/26/97	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	**0.22**	**0.18**	<0.05	**47**
MW-13[1]	6/26/97	**11**	**0.42**	**0.037**	**0.64**	**0.26**	**7.7**	**6.9**	<0.05	**0.3**
MCL		-	0.001	0.150	0.700	1.75	-	-	-	-

Note: Bold indicates detected concentrations. Shaded indicates concentrations exceeding MCLs.
[1] Higher concentration reported for either sample (MW-13) or field duplicate (QC-1).

97-037/F1-Wells



Legend

- Approximate Location of Monitoring Wells
- 88.71 Groundwater Elevations
- Lines of Equal Groundwater Elevations

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

FIGURE 1

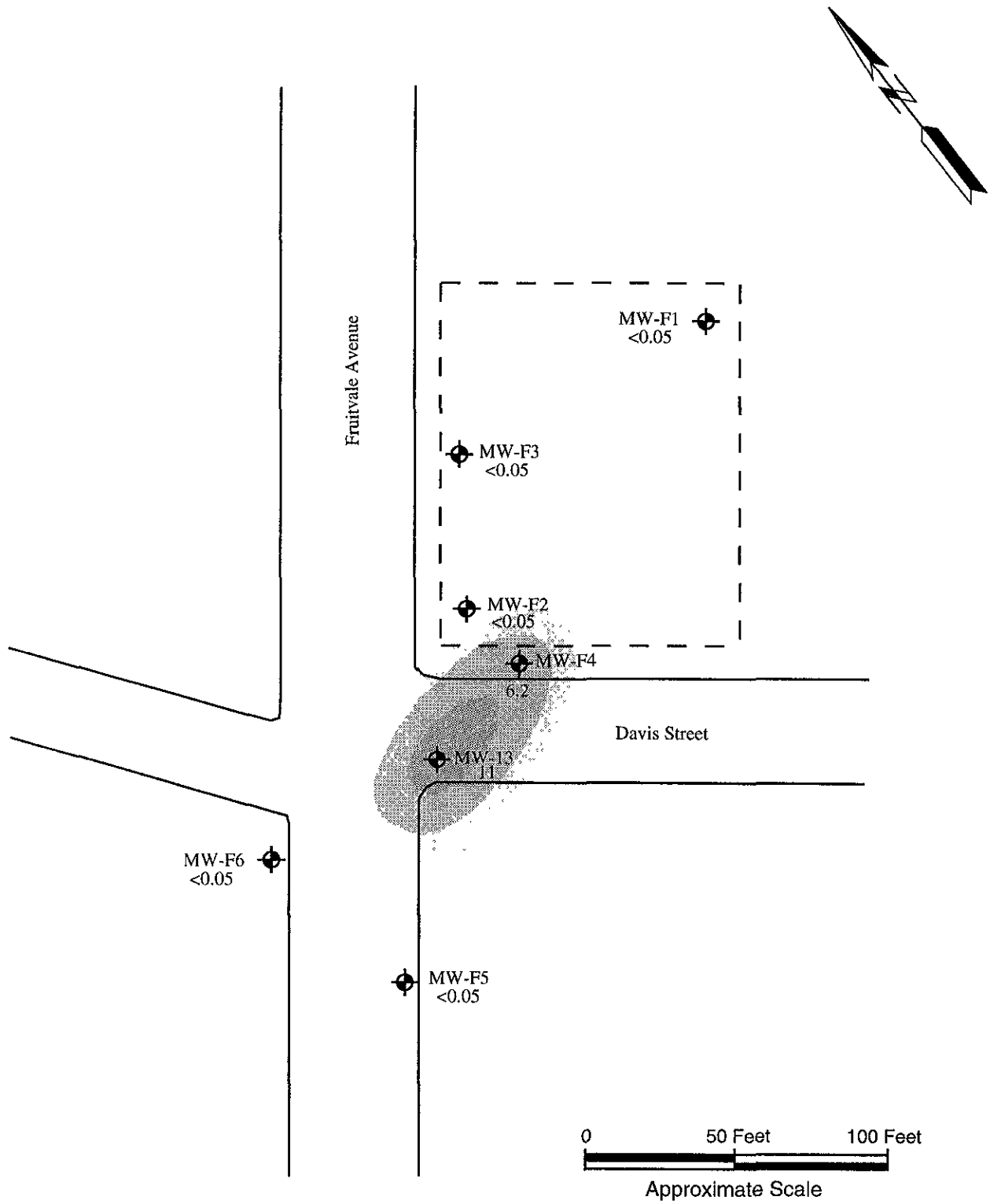
GROUNDWATER ELEVATIONS MEASURED ON JUNE 26, 1997

2662 Fruitvale Avenue
Oakland, California

CITY OF OAKLAND

ITSI
INNOVATIVE TECHNICAL SOLUTIONS, INC.

97-037/F 1-Well



Legend

Approximate Location of Monitoring Wells

<0.05 Concentration of TPHg

TPHg ≥ 0.1 mg/L

TPHg ≥ 1 mg/L

TPHg ≥ 10 mg/L

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

FIGURE 2

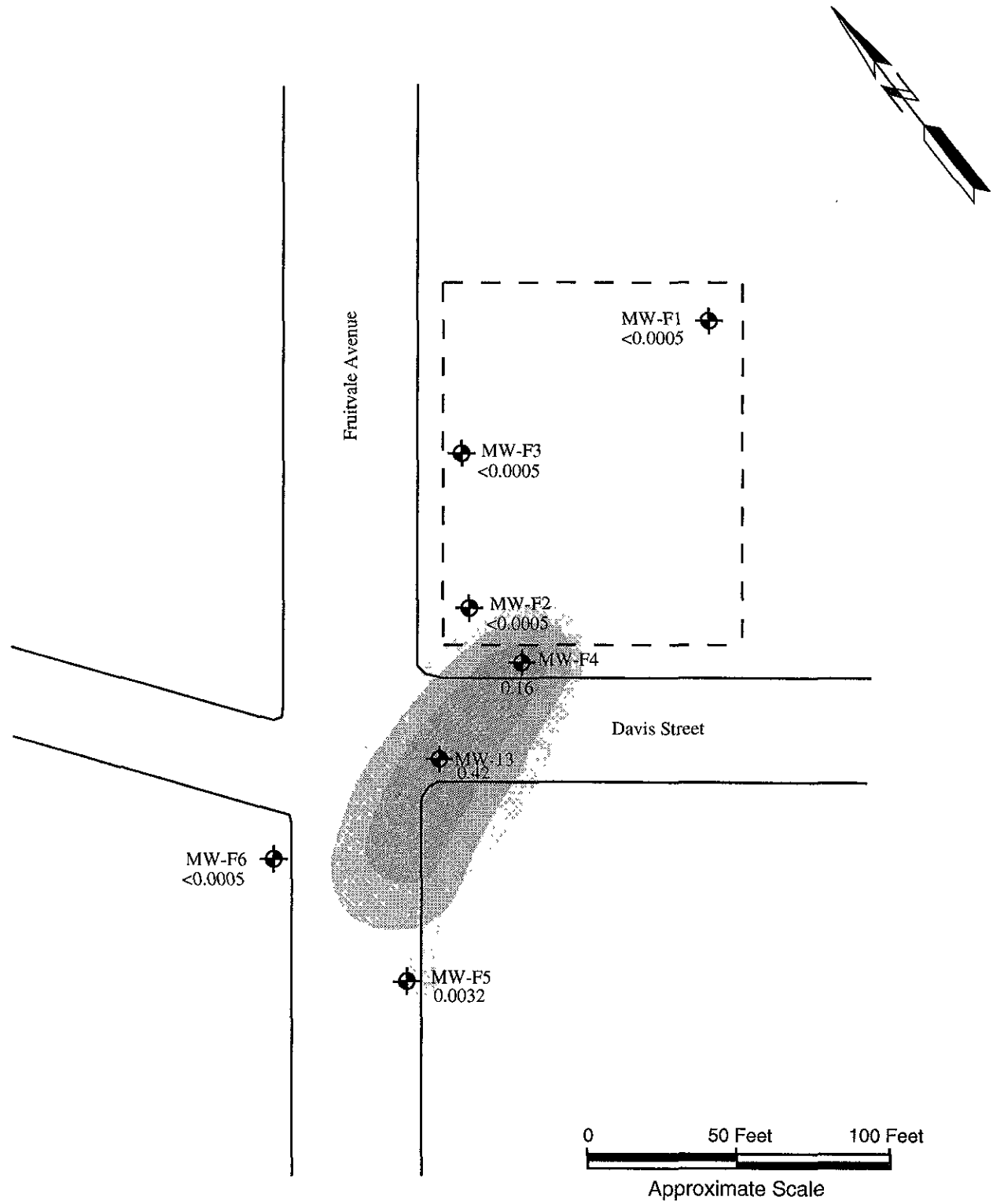
LABORATORY RESULTS FOR TPHg FOR SAMPLES COLLECTED ON JUNE 26, 1997

2662 Fruitvale Avenue
Oakland, California

CITY OF OAKLAND

ITSI
INNOVATIVE TECHNICAL SOLUTIONS, INC.

97-037/F1-Wells



Legend

- Approximate Location of Monitoring Wells
- <0.05 Concentration of benzene in µg/L
- Benzene ≥ 0.001 mg/L
- Benzene ≥ 0.01 mg/L
- Benzene ≥ 0.1 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 JUNE 26, 1997

2662 Fruitvale Avenue
Oakland, California

CITYOF OAKLAND

ITSI
INNOVATIVE TECHNICAL SOLUTIONS, INC.

ATTACHMENT A

COPIES OF MONITORING WELL PURGE AND SAMPLE FORMS

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: City of Oakland - 2662 Fruitvale PROJECT NO.: 95-037

WELL NO.: MW-F1 TESTED BY: J. Scholland DATE: 6/26/97

Measuring Point Description: notch or red mark, T.O.C. Static Water Level (ft.): 11.23

Total Well Depth (ft.): 24.84 Sample Method: Peristaltic Pump w disposable Tubing

Water Level Measurement Method: Solinist IP Time Sampled: 1215

Purge Method: Peristaltic Pump + disposable tubing Sample Depth (ft.): ~12-24'

Time Start Purge: 1140 Field Filtering: Y&S for Soluble iron w/ filter

Time End Purge: 1212 Field Preservation: H_2O ice

Comments: lock absent, replaced w/ 0895 lock; well cap missing all bolts

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		2.18
	24.84		11.23		13.61		0.16	0.64	1.44		3 vols = 6.5

Time	1152	1204	1212				
Volume Purged (gals)	2.25	2.25	2.25				
Cumulative Volume Purged (gals)	2.25	4.5	6.75				
Cumulative Number of Casing Volumes	1.03	2.06	3.09				
Purge Rate (gpm)	0.19	0.19	0.28				
Temperature (F°) or (C°)	78.2	80.5	77.7				
pH	~~78.2~~ 6.56	6.93	6.77				
Specific Conductivity (µmhos/cm) X100	5.04	5.19	4.82				
Dissolved Oxygen (mg/L)	3.90	4.05	3.86				
Turbidity/Color (NTU)	clear	clear	clear				
Odor	None	→	→				
Dewatered?	No	→	→				

J. Scholland

CHECKED BY: _____ DATE: _____

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: City of Oakland - 2662 Fruitvale PROJECT NO.: 95-037

WELL NO.: MW-F2 TESTED BY: S. Scholland DATE: 6/26/97

Measuring Point Description: red mark on notch, T.O.C. Static Water Level (ft.): 11.96

Total Well Depth (ft.): 19.91 Sample Method: Peristaltic Pump + tubing

Water Level Measurement Method: Solinist IP Time Sampled: 1420

Purge Method: Peristaltic Pump + tubing Sample Depth (ft.): ~12-19'

Time Start Purge: 1355 Field Filtering: yes - Soluble iron

Time End Purge: 1415 Field Preservation: H_2O Ice

Comments: Did not have key to lock, replaced lock w/ 0895 lock

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
	19.91	-	11.96	=	7.95	x	2	4	6	=	1.27
							0.16	0.64	1.44		3 vols = 3.8

Time	1400	1408	1415				
Volume Purged (gals)	1.5	1.5	1.5				
Cumulative Volume Purged (gals)	1.5	3.0	4.5				
Cumulative Number of Casing Volumes	1.18	2.36	3.54				
Purge Rate (gpm)	0.3	0.19	0.21				
Temperature (F° or C°)	73.6	73.1	73.3				
pH	6.84	6.95	6.89				
Specific Conductivity (µmhos/cm) X100	5.49	5.37	5.23				
Dissolved Oxygen (mg/L)	3.99	1.74	1.63				
Turbidity/Color (NTU)	clear	→	→				
Odor	None	→	→				
Dewatered?	No	→	→				

CHECKED BY: _____ DATE: _____

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: City of Oakland - 2662 Fruitvale PROJECT NO.: 95-037

WELL NO.: MW-F3 TESTED BY: J. Scholland DATE: 6/26/97

Measuring Point Description: red/notch, T.O.C Static Water Level (ft.): 11.85

Total Well Depth (ft.): 23.98 Sample Method: Peristaltic Pump & Tubing

Water Level Measurement Method: Solinst IP Time Sampled: 1340

Purge Method: Peristaltic Pump & Tubing Sample Depth (ft.): ~12-23'

Time Start Purge: ~~1242~~ 1305 Field Filtering: Yes (soluble Fe)

Time End Purge: 1335 Field Preservation: H2O Ice

Comments: Do not have key to lock, cut lock & replaced w/ 0895 lock; well lid missing one bolt

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)
	23.98	-	11.85	=	12.13		0.16	0.64	1.44		1.94 (3 vols = 5.82)

Time	1316	1327	1335				
Volume Purged (gals)	2.0	2.0	2.0				
Cumulative Volume Purged (gals)	2.0	4.0	6.0				
Cumulative Number of Casing Volumes	1.03	2.06	3.09				
Purge Rate (gpm)	0.2	0.18	0.25				
Temperature (F°) or (C°)	73.3	72.6	71.4				
pH	6.84	6.80	6.77				
Specific Conductivity (µmhos/cm) X100	6.37	6.48	6.37				
Dissolved Oxygen (mg/L)	1.77	1.21	1.30				
Turbidity/Color (NTU)	clear	→	→				
Odor	None	→	→				
Dewatered?	No	→	→				

CHECKED BY: _____ DATE: _____

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: City of Oakland – 2662 Fruitvale PROJECT NO.: 95-037

WELL NO.: MW-F4 TESTED BY: S. Schollard DATE: 6/26/97

Measuring Point Description: red mark on notch, TOC Static Water Level (ft.): 10.94

Total Well Depth (ft.): 16.87 Sample Method: Peristaltic Pump + Tubing

Water Level Measurement Method: Solinist IP Probe Time Sampled: 1520

Purge Method: Peristaltic Pump + Tubing Sample Depth (ft.): ~ 11-16'

Time Start Purge: 1450 Field Filtering: Yes (soluble Fe)

Time End Purge: 1515 Field Preservation: H_2O Ice

Comments: missing all 3 bolts from well lid; product odors from well
slow recharge during sampling collected partial water sample initially; completed sampling after recharge (later)

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)
	16.87	-	10.94	=	5.93	x	0.16	0.64	1.44	=	0.95 (3 Vols = 2.85)

Time	1455	1505	1515				
Volume Purged (gals)	1.0	1.0	1.0				
Cumulative Volume Purged (gals)	1.0	2.0	3.0				
Cumulative Number of Casing Volumes	1.05	2.10	3.15				
Purge Rate (gpm)	0.20	0.10	0.10				
Temperature (F°) or (C°)	74.8F°	74.7F°	72.9				
pH	6.78	6.78	6.93				
Specific Conductivity (µmhos/cm) X100	6.93X100	6.72x100	6.60				
Dissolved Oxygen (mg/L)	1.50	1.92	2.11				
Turbidity/Color (NTU)	clear	→	→				
Odor	Yes	→	→				
Dewatered?	No	→	Yes				

CHECKED BY: _____ DATE: _____

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: City of Oakland - 2662 Fruitvale PROJECT NO.: 95-037

WELL NO.: MW-F5 TESTED BY: J. Scholland DATE: 6/26/97

Measuring Point Description: red mark on notch, TOC Static Water Level (ft.): 11.61

Total Well Depth (ft.): 24.04 Sample Method: Peristaltic Pump & tubing

Water Level Measurement Method: Solinst IP Time Sampled: 1620

Purge Method: Peristaltic Pump & tubing Sample Depth (ft.): ~12-24'

Time Start Purge: 1537 Field Filtering: Yes (soluble Fe)

Time End Purge: 1618 Field Preservation: H_2O Ice

Comments: did not have key to lock, cut lock & replaced w/ 0885 lock

Well Volume Calculation (fill in before purging)	Total Depth (ft)		Depth to Water (ft)		Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		1.99
	24.04	-	11.61	=	12.43		0.16	0.64	1.44		(3 Vols = 5.97)

Time	~~1603~~ 1543	~~1558~~ 1558	1618				
Volume Purged (gals)	2.0	2.0	2.0				
Cumulative Volume Purged (gals)	2.0	4.0	6.0				
Cumulative Number of Casing Volumes	1.01	2.02	3.03				
Purge Rate (gpm)	0.33	0.13	0.11				
Temperature (F°) or (C°)	80.2	72.9	78.1				
pH	6.62	6.60	6.64				
Specific Conductivity (µmhos/cm) X100	5.55	5.42	5.39				
Dissolved Oxygen (mg/L)	2.64	1.22	1.34				
Turbidity/Color (NTU)	clear	→	→				
Odor	None	→	→				
Dewatered?	No	→	starting				

Jen Scholland

CHECKED BY: _____ DATE: _____

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: City of Oakland - 2662 Fruitvale PROJECT NO.: 75-037

WELL NO.: MW-F6 TESTED BY: J. Scholland DATE: 6/26/97

Measuring Point Description: red mark @ notch, T.O.C. Static Water Level (ft.): 11.35

Total Well Depth (ft.): 21.03 Sample Method: Peristaltic Pump & Tubing

Water Level Measurement Method: Solinist IP Time Sampled: 1730

Purge Method: Peristaltic Pump & Tubing Sample Depth (ft.): ~12-21'

Time Start Purge: 1654 Field Filtering: Yes (Soluble Fe)

Time End Purge: 1717 Field Preservation: H_2O Ice

Comments: well head (allen key req'd) in good condition

Well Volume Calculation (fill in before purging)	Total Depth (ft)		Depth to Water (ft)		Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
	21.03	-	11.35	=	9.68		2	4	6	=	1.55
							0.16	0.64	1.44		(3 vols = 4.65)

Time	1700	1709	1717				
Volume Purged (gals)	1.60	1.60	1.60				
Cumulative Volume Purged (gals)	1.60	3.20	4.80				
Cumulative Number of Casing Volumes	1.03	2.06	3.09				
Purge Rate (gpm)	0.27	0.18	0.20				
Temperature (F°) or (C°)	71.9	71.4	69.6				
pH	6.85	6.92	7.07				
Specific Conductivity (µmhos/cm) X/00	4.30	4.95	4.63				
Dissolved Oxygen (mg/L)	1.77	1.70	1.77				
Turbidity/Color (NTU)	clear	→	→				
Odor	None	→	→				
Dewatered?	No	→	→				

CHECKED BY: _____ DATE: _____

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: City of Oakland - 2662 Fruitvale PROJECT NO.: 95-037

WELL NO.: MW-13 TESTED BY: S. Scholland DATE: 6/26/97

DTP = 11.74

Measuring Point Description: red mark on notch, T.O.C. Static Water Level (ft.): 11.76

Total Well Depth (ft.): 23.97 Sample Method: Peristaltic Pump & Tubing

Water Level Measurement Method: Solinist TLP Time Sampled: 1825 (QC-1 @ 1830)

Purge Method: Peristaltic Pump & Tubing Sample Depth (ft.): ~12 - 23'

Time Start Purge: 1751 Field Filtering: Yes (soluble Fe)

Time End Purge: 1816 Field Preservation: H_2O Ice

Comments: did not have key to lock, replaced with 0895 lock; 0.02 free product measured; collected QC-1 (field duplicate) @ 1825

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)
	23.97	-	11.76	=	12.21	x	0.16	0.64	1.44	=	1.95 (3 vols = 5.86)

Time	18.01	1809	1816				
Volume Purged (gals)	2.0	2.0	2.0				
Cumulative Volume Purged (gals)	2.0	4.0	6.0				
Cumulative Number of Casing Volumes	1.03	2.06	3.09				
Purge Rate (gpm)	~~0.19~~ 0.20	0.25	0.28				
Temperature (F°) or (C°)	76.1	74.7	73.2				
pH	6.65	6.75	6.76				
Specific Conductivity (µmhos/cm) X100	7.22	7.31	7.20				
Dissolved Oxygen (mg/L)	1.40	1.48	1.44				
Turbidity/Color (NTU)	clear	→	→				
Odor	yes	→	→				
Dewatered?	No	→	→				

S. Scholland

CHECKED BY: _____ DATE: _____

ITSI

ATTACHMENT B

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

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: QC-1
Spl#: 137504 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 2, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	10000	2500	N.D.	92	50
BENZENE	420	25	N.D.	105	50
TOLUENE	36	25	N.D.	101	50
ETHYL BENZENE	550	25	N.D.	102	50
XYLENES	180	25	N.D.	96	50

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **TRIP BLANK**
Spl#: 137496 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 2, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	92	1
BENZENE	N.D.	0.50	N.D.	105	1
TOLUENE	N.D.	0.50	N.D.	101	1
ETHYL BENZENE	N.D.	0.50	N.D.	102	1
XYLENES	N.D.	0.50	N.D.	96	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

GC V132 O:BTEXQC0220
KAYVAN 7-20

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-F1**
Spl#: 137497 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 2, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	92	1
BENZENE	N.D.	0.50	N.D.	105	1
TOLUENE	N.D.	0.50	N.D.	101	1
ETHYL BENZENE	N.D.	0.50	N.D.	102	1
XYLENES	N.D.	0.50	N.D.	96	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-F2**
Spl#: 137499 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 2, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	92	1
BENZENE	N.D.	0.50	N.D.	105	1
TOLUENE	N.D.	0.50	N.D.	101	1
ETHYL BENZENE	N.D.	0.50	N.D.	102	1
XYLENES	N.D.	0.50	N.D.	96	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-F3**
Spl#: 137498 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 2, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	92	1
BENZENE	N.D.	0.50	N.D.	105	1
TOLUENE	N.D.	0.50	N.D.	101	1
ETHYL BENZENE	N.D.	0.50	N.D.	102	1
XYLENES	N.D.	0.50	N.D.	96	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-F4**
Spl#: 137500 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 3, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	6200	500	N.D.	92	10
BENZENE	160	5.0	N.D.	105	10
TOLUENE	18	5.0	N.D.	101	10
ETHYL BENZENE	710	5.0	N.D.	102	10
XYLENES	320	5.0	N.D.	96	10

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

GC V132 O:BTEXQC0220
KAYVAN 17 20

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-F5**
Spl#: 137501 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 3, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	92	1
BENZENE	3.2	0.50	N.D.	105	1
TOLUENE	6.4	0.50	N.D.	101	1
ETHYL BENZENE	0.73	0.50	N.D.	102	1
XYLENES	4.2	0.50	N.D.	96	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-F6**
Spl#: 137502 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 1, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	92	1
BENZENE	N.D.	0.50	N.D.	105	1
TOLUENE	N.D.	0.50	N.D.	101	1
ETHYL BENZENE	N.D.	0.50	N.D.	102	1
XYLENES	N.D.	0.50	N.D.	96	1

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

GC V132 O:BTEXQC0220
KAYVAN 17-20

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Gasoline BTEX analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-13**
Spl#: 137503 *Matrix:* WATER
Sampled: June 26, 1997 *Run#:* 7569 *Analyzed:* July 2, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	11000	2500	N.D.	92	50
BENZENE	420	25	N.D.	105	50
TOLUENE	37	25	N.D.	101	50
ETHYL BENZENE	640	25	N.D.	102	50
XYLENES	260	25	N.D.	96	50

Kayvan Kimyai
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-256-8998

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

GC V132 D:BTEXQC0220
KAYVAN 17:20

CHROMALAB, INC.

Environmental Services (SDB)

July 8, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-F1**
Spl#: 137576 *Matrix:* WATER *Extracted:* July 3, 1997
Sampled: June 26, 1997 *Run#:* 7609 *Analyzed:* July 8, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	N.D.	0.10	N.D.	--	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 8, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-F2**
Spl#: 137578 *Matrix:* WATER *Extracted:* July 3, 1997
Sampled: June 26, 1997 *Run#:* 7609 *Analyzed:* July 8, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	N.D.	0.10	N.D.	--	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 8, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-F3**
Spl#: 137577 *Matrix:* WATER *Extracted:* July 3, 1997
Sampled: June 26, 1997 *Run#:* 7609 *Analyzed:* July 8, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	0.16	0.10	N.D.	--	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 8, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-F4**
Spl#: 137579 *Matrix:* WATER *Extracted:* July 3, 1997
Sampled: June 26, 1997 *Run#:* 7609 *Analyzed:* July 8, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	3.1	0.10	N.D.	--	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 8, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-F5**
Spl#: 137580 *Matrix:* WATER *Extracted:* July 3, 1997
Sampled: June 26, 1997 *Run#:* 7609 *Analyzed:* July 8, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	N.D.	0.10	N.D.	--	1

Shafi Parekzai
Chemist

John S. Lapash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 8, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-F6**
Spl#: 137581 *Matrix:* WATER *Extracted:* July 3, 1997
Sampled: June 26, 1997 *Run#:* 7609 *Analyzed:* July 8, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	0.18	0.10	N.D.	-/-	1

Shari Barcelai
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 8, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Soluble Miscellaneous Metals analysis.
Method: *EPA 3005A/6010A Nov 1990*

Client Sample ID: **MW-13**
Spl#: 137582 *Matrix:* WATER *Extracted:* July 3, 1997
Sampled: June 26, 1997 *Run#:* 7609 *Analyzed:* July 8, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	6.9	0.10	N.D.	--	1

~~Shafi Tabatabai~~
Chemist

John S. Labash
Inorganics Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3010A/6010A Nov 1990*

Client Sample ID: **MW-F1**
Spl#: 137497 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 26, 1997 *Run#:* 7526 *Analyzed:* June 30, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	0.10	0.10	N.D.	105	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3010A/6010A Nov 1990*

Client Sample ID: **MW-F2**
Spl#: 137499 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 26, 1997 *Run#:* 7526 *Analyzed:* June 30, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	0.10	0.10	N.D.	105	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3010A/6010A Nov 1990*

Client Sample ID: **MW-F3**
Spl#: 137498 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 26, 1997 *Run#:* 7526 *Analyzed:* June 30, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	0.46	0.10	N.D.	105	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3010A/6010A Nov 1990*

Client Sample ID: **MW-F4**
Spl#: 137500 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 26, 1997 *Run#:* 7526 *Analyzed:* June 30, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	2.4	0.10	N.D.	105	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3010A/6010A Nov 1990*

Client Sample ID: **MW-F5**
Spl#: 137501 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 26, 1997 *Run#:* 7526 *Analyzed:* June 30, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	0.21	0.10	N.D.	105	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

M010 0-QC0405 JOHN 17:36

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3010A/6010A Nov 1990*

Client Sample ID: **MW-F6**
Spl#: 137502 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 26, 1997 *Run#:* 7526 *Analyzed:* June 30, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	0.22	0.10	N.D.	105	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

July 7, 1997 *Submission #:* 9706351

INNOVATIVE TECHNICAL SOLUTIONS

Atten: JEFF HESS

Project: CITY OF OAKLAND *Project#:* 95-037
Received: June 27, 1997

re: One sample for Miscellaneous Metals analysis.
Method: *EPA 3010A/6010A Nov 1990*

Client Sample ID: **MW-13**
Spl#: 137503 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 26, 1997 *Run#:* 7526 *Analyzed:* June 30, 1997

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
IRON	7.7	0.10	N.D.	105	1

Christopher Arndt
Chemist

John S. Labash
Inorganics Supervisor

510-256-8998 GC 07/07

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

San Francisco Regional Office

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

July 7, 1997 JUL - 8 REC'D

Ms. Criselda Laluces
CHROMALAB, INC.
1220 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 34395
Clayton Project No.: 97063.86

Dear Ms. Laluces:

Attached is our analytical laboratory report for the samples received on June 27, 1997. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after August 6, 1997, unless you have requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH
Director, Laboratory Services
San Francisco Regional Office

HAH/caa

Attachments

Analytical Results
for
CHROMALAB, INC.
Client Reference: 34395
Clayton Project No. 97063.86

Sample Identification: See Below
Lab Number: 9706386
Sample Matrix/Media: WATER
Method Reference: EPA 353.2

Date Received: 06/27/97
Date Analyzed: 06/27/97

Lab Number	Sample Identification	Date Sampled	Nitrate-N (mg/L)	Method Detection Limit (mg/L)
-01	MW-F1	06/26/97	7.7	0.05
-02	MW-F3	06/26/97	0.70	0.05
-03	MW-F2	06/26/97	<0.05	0.05
-04	MW-F4	06/26/97	<0.05	0.05
-05	MW-F5	06/26/97	6.1	0.05
-06	MW-F6	06/26/97	<0.05	0.05
-07	MW-13	06/26/97	<0.05	0.05
-08	METHOD BLANK	--	<0.05	0.05

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Clayton
ENVIRONMENTAL
CONSULTANTS

Analytical Results
for
CHROMALAB, INC.
Client Reference: 34395
Clayton Project No. 97063.86

Sample Identification: See Below
Lab Number: 9706386
Sample Matrix/Media: WATER
Method Reference: EPA 300.0

Date Received: 06/27/97
Date Analyzed: 07/01/97

Lab Number	Sample Identification	Date Sampled	Sulfate (mg/L)	Method Detection Limit (mg/L)
-01	MW-F1	06/26/97	38	0.1
-02	MW-F3	06/26/97	23	0.1
-03	MW-F2	06/26/97	7.4	0.1
-04	MW-F4	06/26/97	0.2	0.1
-05	MW-F5	06/26/97	45	0.1
-06	MW-F6	06/26/97	47	0.1
-07	MW-13	06/26/97	0.3	0.1
-08	METHOD BLANK	--	<0.1	0.1

ND: Not detected at or above limit of detection
--: Information not available or not applicable

CHROMALAB, INC.

Environmental Service (SDB)

Sample Receipt Checklist

Client Name: **INNOVATIVE TECHNICAL SOLUTIONS** Date/Time Received: 06/27/97 | 1150

Reference/Submis: 34395 | 9706351 Received by: MA

Checklist completed by: Chris Rowley 6/30/97 Reviewed by: MV 6/30
Signature | Date | Initials | Date

Matrix: H2O Carrier name: Client - C/L

Shipping container/cooler in good condition?	Yes ✓	No	Not Present
Custody seals intact on shipping container/cooler?	Yes	No	Not Present ✓
Custody seals intact on sample bottles?	Yes	No	Not Present ✓
Chain of custody present?	Yes ✓	No	
Chain of custody signed when relinquished and received?	Yes ✓	No	
Chain of custody agrees with sample labels?	Yes ✓	No	
Samples in proper container/bottle?	Yes ✓	No	
Sample containers intact?	Yes ✓	No	
Sufficient sample volume for indicated test?	Yes ✓	No	
All samples received within holding time?	Yes ✓	No	
Container/Temp Blank temperature in compliance?	Temp: 3.8 °C Yes ✓	No	
Water - VOA vials have zero headspace?	No VOA vials submitted	Yes ✓	No
Water - pH acceptable upon receipt? YES	Adjusted?	Checked by CR (chemist for VOAs)	

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ **Date contacted:** _____ **Person contacted:** _____

Contacted by: _____ **Regarding:** _____

Comments: _____

Corrective Action: _____

06351/137496-137504

34395

INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI

2855 Mitchell Drive, Suite 118
Walnut Creek, California 94598
(510) 256-8898 (Tel), (510) 256-8998 (Fax)

IRM #: 9706351 REF: GC
CLIENT: ITSI
DATE: 07/07/97
SF #: 34395

PROJECT NAME City of Oakland - 2662 Fruitvale Ave.
PROJECT NUMBER 75-037
SITE LOCATION: 2662 Fruitvale Ave., Oakland, CA

CHAIN OF CUSTODY

DATE 6/26/97
PAGE 1 of 2

SAMPLE ID	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	ANALYSIS: TPH as Gas/BTEX - 8015/8020	TPH as Diesel - 8015	TPH as Diesel - 8015 (w/ Silica Gel Cleanup)	TEPH - 8015	TEPH-8015 m (w/ Silica Gel Cleanup)	TRPH - 418.1	Oil and Grease - 5520	Purgeable Halocarbons - 601/8010	VOCs - 624/ 8240	SVOCs - 625/8270	~~LUFT Metals~~ Soluble Iron * (Cd, Cr, Ni, Pb, Zn)	~~CAM 17 Metals~~ Total Iron	Sulfate + Nitrate	SPECIAL INSTRUCTIONS/COMMENTS
Trip Blank	NA	6/26/97	Lab	2	40 ml	W	X													
MW-F1			1215	3	40 ml		X													
↓			↓	1	1 L P														X	
↓			↓	2	250 ml P												X	X		
MW-F3			1340	3	40 ml		X													
↓			↓	1	1 L P														X	
↓			↓	2	250 ml												X	X		
MW-F2			1420	3	40 ml		X													
↓			↓	1	1 L P														X	
↓			↓	2	250 ml												X	X		
MW-F4			1520	3	40 ml		X													
↓	↓	↓	↓	1	1 L P	↓	Benzene												X	
TOTAL NUMBER OF CONTAINERS				24	TOTAL TESTS		5										3	3	4	

Chroma Lab
Pleasanton, CA

SAMPLED BY: Jim Schollard + Luke Leong
SIGNATURE: Jim Schollard + Luke Leong

SPECIAL INSTRUCTIONS/COMMENTS: Standard T.A.T.; *Soluble iron containers/samples were filtered in the field

RELINQUISHED BY: Luke Leong — Printed Name / Signature
ITSI — Company
6/27/97 11:45AM — Date and Time

RECEIVED BY: Musa — Printed Name / Signature
Chromalab — Company
6-27-97 11:50 — Date and Time

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

RECEIVED BY: Michel Narango — Printed Name / Signature
Company
6-27-97 1415 — Date and Time

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

RECEIVED BY Printed Name / Signature
Company / Date and Time

SEND RESULTS TO: Jeff Hess @ ITSI @ above address

34395

INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI
2855 Mitchell Drive, Suite 118
Walnut Creek, California 94598
(510) 256-8898 (Tel), (510) 256-8998 (Fax)

9706351

PROJECT NAME: City of Oakland - 2662 Fruitvale Ave.
PROJECT NUMBER: 95-037
SITE LOCATION: 2662 Fruitvale Ave., Oakland CA

CHAIN OF CUSTODY

DATE: 6/26/97
PAGE: 2 of 2

SAMPLE I.D.	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	ANALYSIS: TPH as Gas/BTEX - 8015/8020	TPH as Diesel - 8015	TPH as Diesel - 8015 (w/ Silica Gel Cleanup)	TEPH - 8015	TEPH-8015 m (w/ Silica Gel Cleanup)	TRPH - 418.1	Oil and Grease - 5520	Purgeable Halocarbons - 601/8010	VOCs - 624/ 8240	SVOCs - 625/8270	~~LUFT Metals~~ Soluble (Cd, Cr, Ni, Pb, Zn) Iron*	~~CAM-17 Metals~~ Total Iron	Sulfate + Nitrate	SPECIAL INSTRUCTIONS/COMMENTS
MW-F4	N/A	6/26/97	1520	2	250 ml	W											X	X		
MW-F5			1620	3	40 ml		X													
				1	1 l P															
				2	250 ml												X	X		
MW F6			1730	3	40 ml		X													
				1	1 l P															
				2	250 ml												X	X		
MW-13			1825	3	40 ml		X													
				2	1 l P															
				1	250 ml												X	X		
QC-1			—	3	40 ml		X													
											Not Used (JS) 6/26/97									
TOTAL NUMBER OF CONTAINERS				23	TOTAL TESTS		4										4	4	3	

Chroma Lab
Pleasanton, CA

SAMPLED BY: Jim Scholl + Luke Leong
SIGNATURE: Jim Scholl + Luke Leong

SPECIAL INSTRUCTIONS/COMMENTS: See page 1

RELINQUISHED BY: Luke Leong (Printed Name) Luke Leong (Signature)
ITSI (Company) 6/27/97 11:45AM (Date and Time)

RECEIVED BY: Musa (Printed Name) (Signature)
Chromalab (Company) 6-27-97 11:50 (Date and Time)

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

RECEIVED BY: Mike Narango (Printed Name) Mike Narango (Signature)
(Company) 6/27/97 - 1415 (Date and Time)

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

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

SEND RESULTS TO: See pg. 1