3rd 2000

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
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RO250 DH

Cost ?

September 7, 2000

Mr. Tom Peacock
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

00 SEP 12 AM 8:30

Subject: Investigation at Vacant Parcel, located at the intersection of 6th and Castro Streets in Oakland, CA

Dear Mr. Peacock:

Enclosed please find a copy of the Third Quarter 2000 Groundwater Monitoring Report for the vacant parcel, located at the intersection of 6th and Castro Streets in Oakland, CA.

If you have any question or need further information, please contact Jill Pollock at (510) 286-5638.

Sincerely,

HARRY Y. YAHATA
District Director

By: Jill Pollock

for CELIA MCCUAIG
District Branch Chief
Office of Environmental Engineering

Attachment

cc: CM, file, chron

THIRD QUARTER 2000

FIFTH QUARTERLY GROUNDWATER MONITORING REPORT

TASK ORDER NUMBER 04-952137-ES
CONTRACT NUMBER 43A0012

SIXTH AND CASTRO STREETS
OAKLAND, CALIFORNIA

Prepared for

CALIFORNIA DEPARTMENT OF TRANSPORTATION
District 4
P.O. Box 23660
Oakland, California

Prepared by

Professional Service Industries
1320 West Winton Avenue
Hayward, California 94545
(510) 785-1111

September 5, 2000
575-9G034

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this Site Investigation Report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Caltrans for the evaluation of subsurface conditions as it pertains to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted identified any or all sources or locations of contamination.

This report is issued with the understanding that Caltrans is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency. This report has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

Frank R. Poss
Senior Hydrogeologist

John D. Whiting, RG
Senior Project Geologist

1.0 INTRODUCTION

This report summarizes the results of the Third Quarter 2000 groundwater monitoring activities conducted on August 8, 2000 at the intersection of 6th and Castro Streets located in Oakland, California. The subject site location is presented on Figure 1. The purpose of this project is to comply with quarterly sampling requirements for Alameda County Department of Environmental Health. This is the fifth quarter of groundwater monitoring conducted by PSI.

2.0 SITE HISTORY

The site is currently a vacant lot that is surrounded by Brush Street to the west, 7th Street to the north, Castro Street to the east, and 6th Street to the south. In 1987, ERM-West Consultants (ERM) conducted an environmental site assessment to identify any environmental concerns resulting from chemical hazardous waste generation at the site. Historical records searches indicated that the site has formerly been occupied by a number of businesses, most notably a gas station, an auto repair garage, Durham Farm Creamery, a machine shop, and a laundry facility. At least four underground storage tanks (USTs) were associated with the former gas station and dairy (IT, 1996). This service station was located at the intersection of 6th Street and Brush Street (Geocon, 1995).

ERM drilled seven soil borings at the site to collect soil samples for analyses. The results from the analyses of the soil samples identified up to 1.3 parts per million (ppm) ethylbenzene, 1.5 ppm toluene, and 7.9 ppm xylenes. The analytical results from groundwater samples collected during drilling had concentrations up to 0.5 ppb ethylbenzene, 0.3 ppb toluene, and 5 ppb total xylenes (ACHCSA, 1998).

In a 1995 investigation conducted by Geocon Environmental Consultants (Geocon), soil and groundwater samples were collected from seven additional locations. The results of the analyses of the soil samples identified up to 410 ppm lead and 8,000 ppm oil and grease. The results from two groundwater samples analyzed did not contain detectable concentrations of Total Petroleum Hydrocarbons as Gasoline (TPH-G); TPH as Diesel (TPH-D); and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) (IT,1996).

In a 1996 investigation conducted by International Technology Corporation (IT), soil and groundwater samples were collected from 11 additional borings. The maximum concentration in the soil samples analyzed are presented below:

Total Petroleum Hydrocarbons as Gasoline (TPH-G)	1,100 ppm
Benzene	2.6 ppm
Toluene	34 ppm
Ethylbenzene	25 ppm
Total Xylenes	140 ppm
Total Lead	397 ppm

The maximum concentration in the four groundwater samples collected from the above referenced borings are the following:

Total Petroleum Hydrocarbons as Gasoline (TPH-G)	1,700 ppb
Benzene	51 ppb
Toluene	200 ppb
Ethylbenzene	59 ppb
Total Xylenes	290 ppb
1,2 Dichloroethane	5.4 ppb

In a 1999 investigation completed by PSI, soil and groundwater samples were collected from 11 additional borings and three groundwater monitoring wells were installed. The maximum concentration in the soil samples analyzed are presented below:

Total Petroleum Hydrocarbons as Gasoline (TPH-G)	600 ppm
Benzene	0.2 ppm
Toluene	3.7 ppm
Ethylbenzene	17 ppm
Total Xylenes	67 ppm
Total Lead	1,700 ppm

The maximum concentration in the 14 groundwater samples analyzed are the following:

Total Petroleum Hydrocarbons as Gasoline (TPH-G)	58,000 ppb
Benzene	3,900 ppb
Toluene	3,700 ppb
Ethylbenzene	14,000 ppb
Total Xylenes	12,000 ppb
1,2 Dichloroethane	160 ppb

The petroleum hydrocarbon impacted soil and groundwater was primarily found in the southwestern corner of the site.

3.0 GROUNDWATER MONITORING ACTIVITIES

3.1 GROUNDWATER ELEVATION AND HYDRAULIC GRADIENT

On August 8, 2000, static groundwater elevations were measured in wells MW-1, MW-2, and MW-3 (Figure 2). The groundwater depths were measured using a groundwater interface probe. The average groundwater elevation decreased 0.27 meters (0.9 feet) compared to last quarter. The decrease in groundwater elevation is probably due to seasonal effects.

A summary of the depth to groundwater data collected during this monitoring event and previous monitoring events is presented in Table 1. Based on the groundwater data, the inferred groundwater flow direction beneath the site is to the south with a hydraulic gradient of 0.01 (Figure 2). Other than the first quarter of groundwater sampling where the flow direction was to the east, the flow direction at the site has been to the south. The hydraulic gradient site at the site has ranged from 0.006 to 0.01 at the site.

3.2 GROUNDWATER SAMPLING

Groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3. A duplicate sample of MW-3 was obtained and labeled MW-10. Prior to the collection of groundwater samples, the monitoring wells were purged of a minimum of three well volumes of water until pH, conductivity, and temperature stabilized.

The following procedures for well monitoring, well purging, and water sampling were implemented while sampling the wells:

1. All equipment was washed prior to entering the well with an Alconox solution, followed by two tap water rinses and a deionized water rinse.

2. Prior to purging the wells, depth-to-water was measured using an Solinst groundwater interface probe to an accuracy of approximately 0.01 foot. The measurements were made to the top of the well casing on the north side.

3. Monitoring wells at the site were prepared for sampling by purging the well of approximately 3 well volumes of water using disposable Teflon bailers.

4. Water samples were collected with a single-use Teflon bailer. The water collected was immediately decanted into laboratory-supplied vials and bottles. The containers were overfilled, capped, labeled, and placed in a chilled cooler prior to delivery to the laboratory for analysis.

5. Chain-of-custody procedures, including chain-of-custody forms, were used to document water sample handling and transport from collection to delivery to the laboratory for analyses.

6. Purged water was contained in a DOT approved 55-gallon drum. The drum was labeled with the contents, date, well number, client name, and project number.

7. Groundwater samples were delivered to the State-certified hazardous waste laboratory within 24-hours of collection.

The groundwater monitoring purge logs are presented in Appendix A.

3.3 LABORATORY ANALYSIS AND RESULTS

The groundwater samples were submitted for analyses to Centrum Analytical of Redlands, California, a State of California certified hazardous waste analytical laboratory. The samples were analyzed for the following:

- EPA Method 413.2 – Total Oil & Grease (TOG)
- EPA 8015 modified - TPH-G;
- EPA 8015 modified - Total Petroleum Hydrocarbons as Diesel (TPH-D);
- EPA 8260 - Volatile Organic Compounds (VOCs).
- EPA 6010 – Soluble Lead.

A summary of the laboratory results for groundwater samples is presented in Table 2 and Table 3. A copy of the laboratory reports and chain of custody records are presented in Appendix B. The following are the results of the groundwater sampling:

- TOG was detected in Well MW-2 at 8.8 milligrams per liter (mg/L). This concentration is less than the previous sampling result of 10 mg/L in Well MW-2.

- TPH-G was detected in Well MW-2 at 37 mg/L. This concentration is less than the previous sampling result of 56 mg/L in Well MW-2.

- TPH-D was not detected in groundwater samples from the site this quarter. This is comparable to the previous sampling results.

- MTBE was not detected in groundwater samples from the site this quarter. This is comparable to the previous sampling results.

- Benzene was detected in Well MW-2 at 0.70 mg/L. This concentration is less than the previous sampling result of 0.74 mg/L in Well MW-2.

- Toluene (4,300 ug/L), ethylbenzene (2,400 ug/L) and total xylenes (11,000 ug/L), were detected in well MW-2 at concentrations comparable to the previous sampling results.

- BTEX was not detected in the other groundwater samples. Trace concentrations of toluene ethylbenzene, and total xylenes were detected in monitoring well MW-3 for the first time in the previous quarter sampling.

- Concentrations of gasoline related compounds n-butylbenzene (170 ug/L), isopropylbenzene (74 ug/L), naphthalene (860 ug/L), n-propylbenzene (270 ug/L), 1,2,4 trimethylbenzene (1,900 ug/L), and 1,3,5 trimethylbenzene (550 ug/L) were detected in Well MW-2.

- 1,2 DCA (69 ug/L) was detected in MW-2 and was less than the previous quarters result (78 ug/L). The common usage for this compound in a service station environment is as a brake and electrical parts cleaner or as an additive to leaded gasoline.

- Trichloroethene (TCE) was not detected in the groundwater samples. TCE was detected in MW-2 at 9.1 ug/L and in MW-1 at 0.9 ug/L for the first time In the previous quarterly sampling. The common usage for this compound in a service station environment is as a brake and electrical parts cleaner.

- Soluble lead was not detected in the groundwater samples.

The State of California Primary Drinking Water Standards (PDWS) for benzene is 1 ug/L, toluene is 150 ug/L, ethylbenzene is 700 ug/L, total xylenes is 1,750 ug/L, TCE is 5 ug/L, and 1,2 DCA is 0.5 ug/L. The concentrations of BTEX and 1,2 DCA in the groundwater sample collected from Well MW-2 exceeded their respectable PDWS.

Figure 3 depicts the concentrations of benzene, 1,2 DCA, and TCE detected in monitoring well MW-2 with time. It is apparent from this figure that the benzene concentration has stayed relatively constant and the 1,2 DCA concentration has declined gradually with time. TCE was detected only once (Second Quarter 2000) and therefore the data is insufficient at this time to make a determination of the trend of the TCE concentration.

The fluctuations in the TPH and VOC concentrations in the previous quarters are probably due to seasonal fluctuations in the groundwater table.

4.0 SUMMARY AND CONCLUSIONS

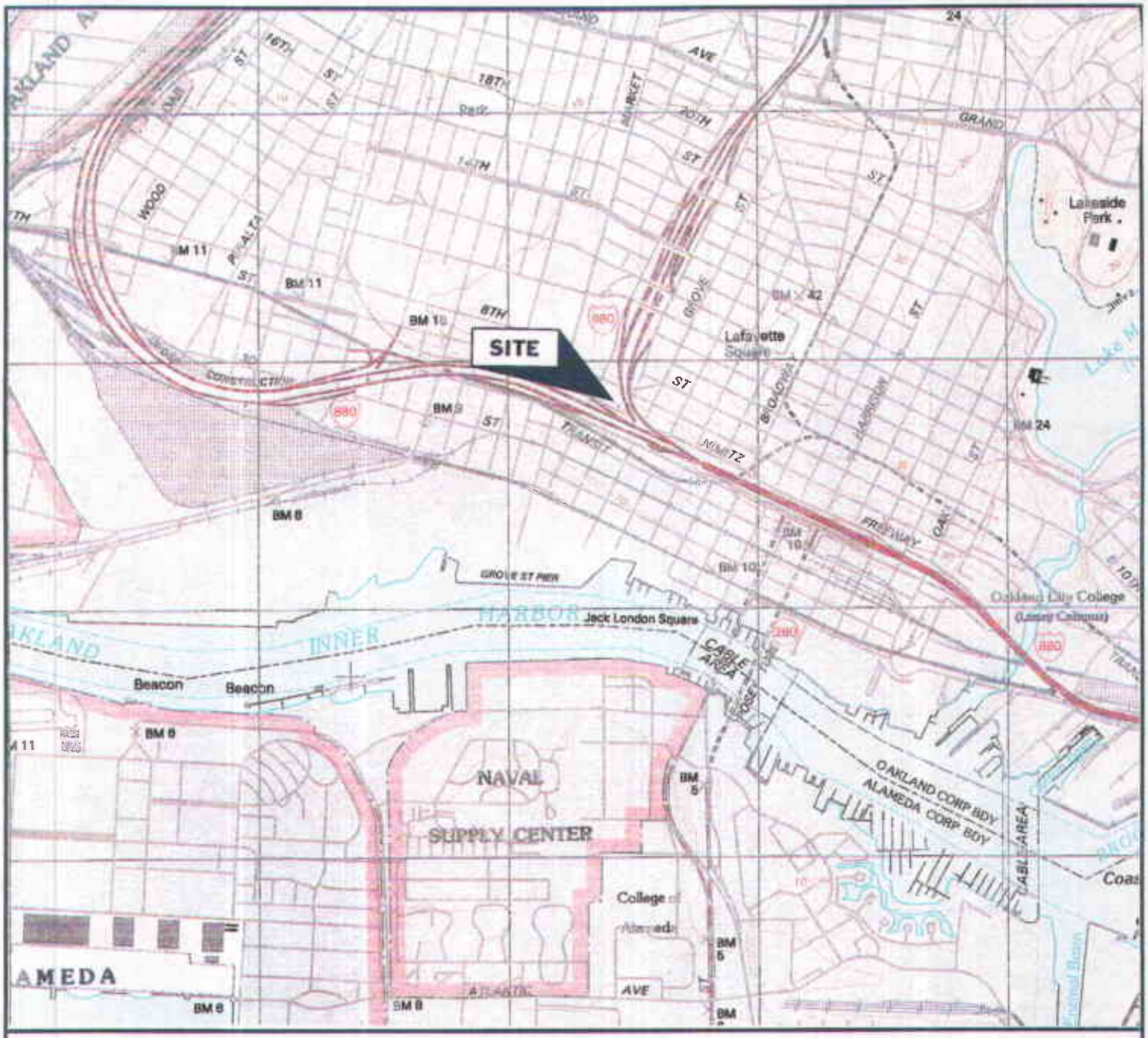
PSI performed a quarterly monitoring event on August 8, 2000. Groundwater samples were collected from the three monitoring wells with a duplicate obtained from MW-3 and labeled MW-10. Based on measurements collected and analytical data the following summary is provided.

- Groundwater elevation data indicates the groundwater flow direction beneath the site is towards the south, with a hydraulic gradient of 0.01 meter per meter (0.01 foot per foot). This is comparable to the previous three sampling events.
- Average groundwater elevations is approximately 0.27 meters (0.9 feet) higher than the average groundwater elevation measured for the previous sampling event.
- TPH-D was not detected in groundwater samples this quarter.
- . TPH-G was detected in the sample collected from Well MW-2 (69 mg/l).
- BTEX concentrations were detected in the sample collected from well MW-2.
- BTEX concentrations were not detected in the other groundwater samples.
- The oxygenates MTBE, TBA, DIPE, ETBE, and TAME were not detected in the EPA Method 8260 analyses this quarter.
- Concentrations of the gasoline related compounds n-butylbenzene, isopropylbenzene, naphthalene, n-Propylbenzene, 1,2,4 Trimethylbenzene and 1,3,5 Trimethylbenzene were detected in Well MW-2.
- 1,2 DCA was detected in MW-2 at 69 µg/l.
- The BTEX and 1,2 DCA concentrations in well MW-2 are above their respective State of California Primary Drinking Water Standards.
- Soluble lead was not detected in the groundwater samples.

Based on five quarters of groundwater sampling, the following can be concluded.

- The groundwater flow direction at the site is to the south at a shallow gradient.
- A groundwater plume that exceeds the PDWS for numerous compounds associated with a gas station is present on the southwest corner of the subject property. The contaminated groundwater is likely due to historical use of this portion of the property as a gas station.
- Concentrations of the main COCs have not decreased with time with the exception of 1,2 DCA.
- The extent of the groundwater plume has not been identified to the south and likely has migrated off of the site boundaries.

PSI recommends continued groundwater monitoring at the site and an off-site investigation to determine the extent of the groundwater plume to the south. Based on the lack of TPH-D concentrations in any of the groundwater samples during the past five quarters and lead being detected in only one sample during the past five quarters, PSI recommends that the quarterly sampling for these compounds be eliminated. Copies of this report should be provided to the appropriate regulatory agencies.

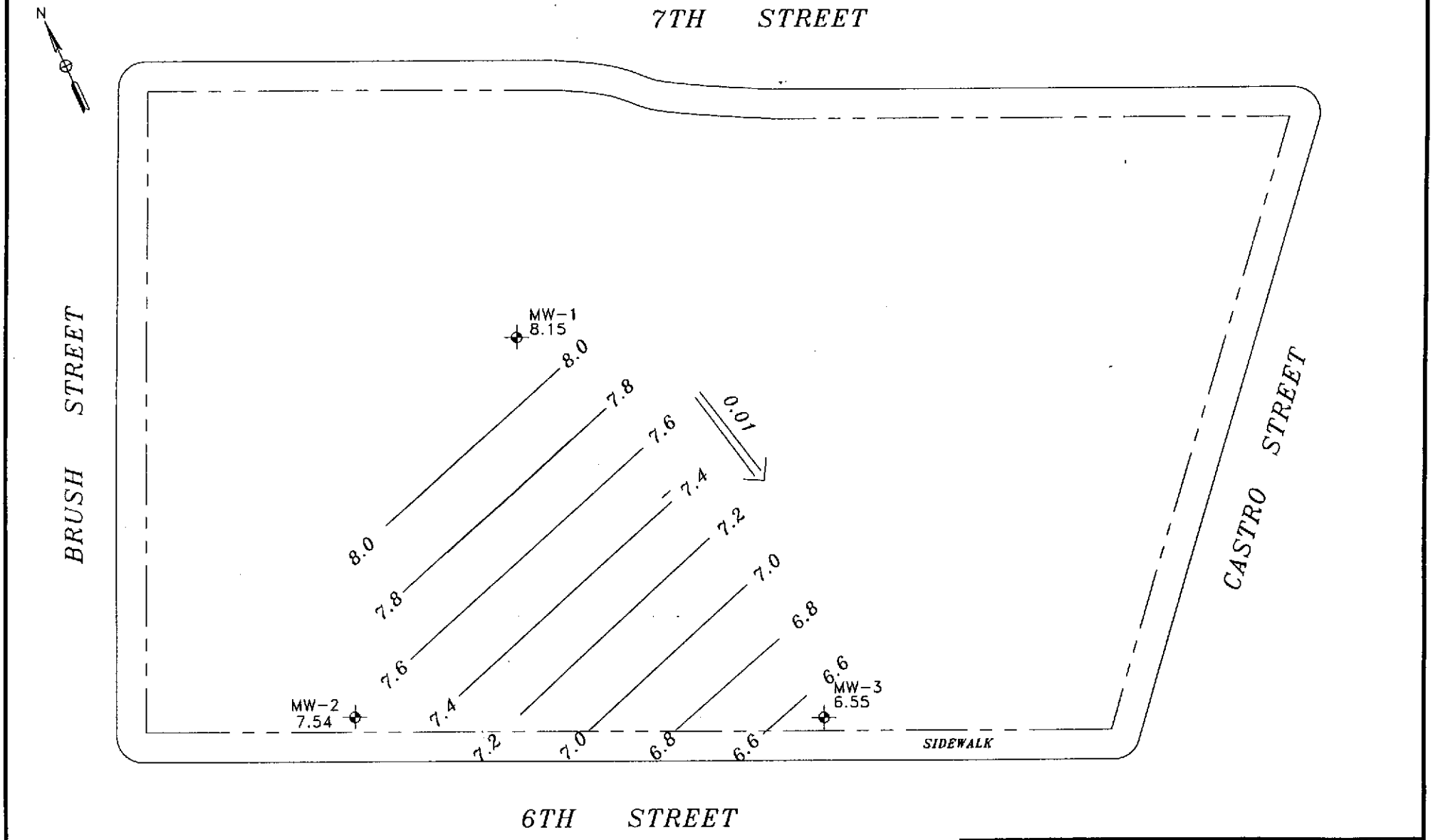


REFERENCE:
U.S.G.S. OAKLAND WEST, CALIFORNIA, 1993

psi ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

SITE LOCATION
STATE RIGHT-OF-WAY
SIXTH AND CASTRO STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-9G034

DATE: 5/05/99	CKD'D BY:	FIGURE NO.: 1
FILE NO.: 9G034-1		DRAWN BY: S. BOWERS



LEGEND

- GROUNDWATER MONITORING WELL LOCATION
- 7.2 —— 7.2 GROUNDWATER ELEVATION CONTOUR
- 0.01 GROUNDWATER FLOW DIRECTION AND GRADIENT

0 50 100
SCALE IN FEET

SOURCE: NORCAL, 1999

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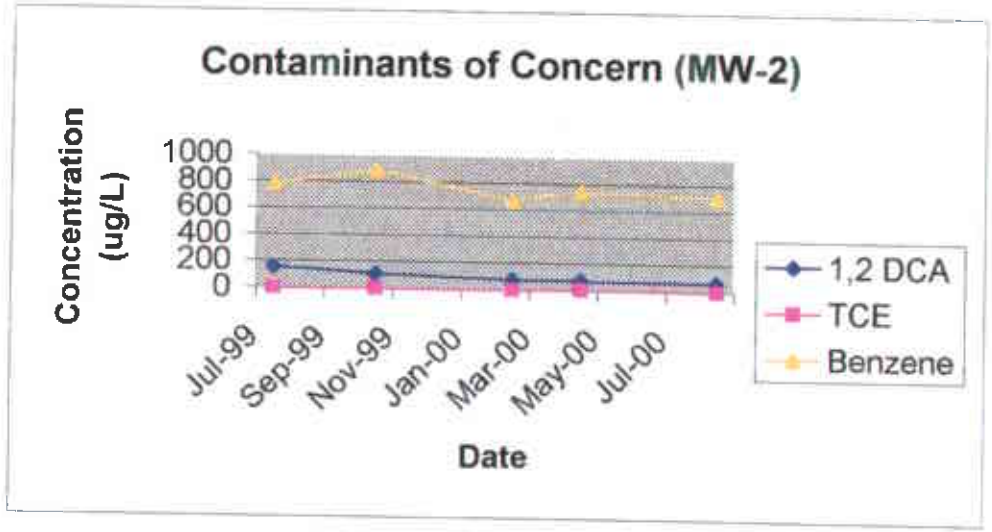
GROUNDWATER ELEVATION MAP: 8/8/00

STATE RIGHT-OF-WAY
SIXTH AND CASTRO STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-9G034

DATE 9/4/00	CKD BY:	FIGURE NO: 2
FILE NO: 9G034-3N		DRAWN BY A. CONSTANTINESCU



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CONTAMINANTS OF CONCERN IN MW-2

STATE RIGHT-OF-WAY
SIXTH AND CASTRO STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-90034

DATE 9/4/00	CKD BY:	FIGURE NO: 3
FILE NO: 90034-3R		DRAWN BY A. CONSTANTINESCU

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS
CALTRANS MAINTENANCE STATION
6TH AND CASTRO STREETS, OAKLAND, CA

SAMPLE NUMBER	DATE	GROUND SURFACE ELEVATION	WELL CASING ELEVATION	DEPTH TO GROUNDWATER	GROUNDWATER ELEVATION
MW-1	7/2/99	23.74	26.85	19.89	6.96
	10/25/99	23.74	26.85	19.71	7.14
	2/7/00	23.74	26.85	19.22	7.63
	4/27/00	23.74	26.85	17.71	9.14
	8/8/00	23.74	26.85	18.7	8.15
MW-2	7/2/99	18.67	21.56	14.21	7.35
	10/25/99	18.67	21.56	15.38	6.18
	2/7/00	18.67	21.56	14.52	7.04
	4/27/00	18.67	21.56	13.51	8.05
	8/8/00	18.67	21.56	14.02	7.54
MW-3	7/2/99	19.60	21.04	14.57	6.47
	10/25/99	19.60	21.04	15	6.04
	2/7/00	19.60	21.04	14.85	6.19
	4/27/00	19.60	21.04	13.33	7.71
	8/8/00	19.60	21.04	14.49	6.55

NOTES:
All elevation and depth data presented in feet.

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
CALTRANS MAINTENANCE STATION
6TH CASTRO STREETS, OAKLAND, CA

All concentrations in ug/l (PPB).

SAMPLE NUMBER	DATE	OIL & GREASE	TPH-G	TPH-D	MTBE	Benzene	E-Benzene	Toluene	Xylenes	VOCs*	LEAD
MW-1	7/2/99	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<100
	10/25/99	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<100
	2/7/00	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<100
	4/27/00	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	**0.9**	<100
	8/8/00	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<15
MW-2	7/2/99	**6,300**	**26,000**	<4,000	**<1**	**780**	**1,300**	**4,200**	**5,000**	**2,830**	<100
	10/25/99	**4,400**	**33,000**	<400	<50	**880**	**1,800**	**4,300**	**4,800**	**2,490**	<100
	2/7/00	**8,800**	**29,000**	<400	<50	**670**	**1,500**	**4,800**	**8,700**	**2,240**	<100
	4/27/00	**10,000**	**56,000**	<400	<50	**740**	**2,500**	**5,200**	**11,000**	**4,150**	<100
	8/8/00	**8,800**	**37,000**	<400	<50	**700**	**2,400**	**4,300**	**11,000**	**4,150**	<15
MW-3	7/2/99	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<100
	10/25/99	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<100
	2/7/00	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<100
	4/27/00	<2,000	<500	<400	<1	<0.5	**1.9**	**0.9**	**3.6**	ND*	0.37
	8/8/00	<2,000	<500	<400	<1	<0.5	<0.5	<0.5	<0.5	ND*	<15

NOTES
Sample concentrations reported in ug/l (micrograms per liter).
TPH-G denotes Total Petroleum Hydrocarbons as Gasoline, TPH-D denotes Total Petroleum Hydrocarbons as Diesel.
MTBE denotes Methyl Tert Butyl Ether, E-Benzene denotes Ethylbenzene, VOCs* denotes Volatile Organic Compounds analyzed by EPA Method 8260.
ND denotes Not Detected, detection limit presented in parentheses.
ND* denotes all anaytes included in EPA Method 8260 analyte list not presented on this table, Not Detected.

TABLE 3
SUMMARY OF VOC COMPOUNDS
CALTRANS MAINTENANCE STATION
6TH CASTRO STREETS, OAKLAND, CA

All concentrations in ug/l (PPB).

SAMPLE NUMBER	DATE	n-Butylbenzene	1,2 DCA	1,2-DCP	IPB	IPT	Naphthalene	n-Propylbenzene	TCE	1,2,4 TMB	1,3,5 TMB
MW-1	7/2/99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/25/99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/7/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4/27/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.9**	<0.5	<0.5
	8/8/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	7/2/99	<25	**160**	<25	**60**	<25	**590**	**200**	<25	**1,400**	**420**
	10/25/99	<25	**110**	<25	**54**	<25	**600**	**170**	<25	**1,200**	**360**
	2/7/00	<5	**79**	<5	**44**	<5	**620**	**160**	<5	**1,100**	**320**
	4/27/00	**<25**	**78**	**15**	**77**	28	**1,100**	**270**	**9.1**	**2,000**	**570**
	8/8/00	**170**	**69**	<25	**74**	<25	**860**	**270**	<25	**1,900**	**550**
MW-3	7/2/99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/25/99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2/7/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4/27/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	8/8/00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

NOTES
Sample concentrations reported in ug/l (microgram per liter).
1,2 DCA denotes 1,2 Dichloroethane; 1,2-DCP denotes 1,2-Dichloropropane; IPB denotes Isopropylbenzene; IPT denotes p-Isopropyltoluene
TCE denotes Trichloroethene; 1,2,4 TMB denotes 1,2,4 Trimethylbenzene; 1,3,5 TMB denotes 1,3,5 Trimethylbenzene,
<0.5 = Not detected at detection limit shown

FLUID MEASUREMENT FIELD DATA

SHEET: 1 OF 1

DATE: 8-8-00 | PROJECT NAME: CALTRANS 6th + CASTRO | PROJECT NO: 96034

WATER LEVEL MEASUREMENT INSTRUMENT: SOLINST | SERIAL NO: 12080

PRODUCT DETECTION INSTRUMENT: | SERIAL NO:

EQUIP. DECON: ☒ ALCONOX WASH ☐ DIST/DEION 1 RINSE ☐ ISOPROPANOL ☐ ANALYTE FREE FINAL RINSE ☐ TAP WATER FINAL RINSE

☐ TAP WATER WASH ☐ LIQUINOX WASH ☒ DIST/DEION 2 RINSE ☐ OTHER SOLVENT ☐ DIST/DEION FINAL RINSE ☐ AIR DRY

WELL NUMBER	GROUND SURFACE ELEVATION	TOP OF CASING ELEVATION	DEPTH TO PRODUCT BELOW TOC	DEPTH TO WATER BELOW TOC	WELL DEPTH BELOW TOC	PRODUCT THICKNESS	WATER TABLE ELEVATION	ACTUAL TIME
MW-1				18.70	23.24	-		0840
MW-2				14.02	22.42			0850
MW-3				14.49	~22.00			0845

REMEMBER TO CORRECT PRODUCT THICKNESS FOR DENSITY BEFORE CALCULATING WATER TABLE ELEVATION

PREPARED BY:

PSI
Rev. 12/95

WELL PURGING AND SAMPLING DATA

WELL NO: MW-3

DATE: 8-6-00 | PROJECT NAME: CALTRANS GTN + CASTRO | PROJECT NO: 96-034

WEATHER CONDITIONS: CLOUDY, WARM

WELL DIAMETER (IN.) ☐ 1 ☒ 2 ☐ 4 ☐ 6 ☐ OTHER _____

SAMPLE TYPE: ☒ GROUNDWATER ☐ WASTEWATER ☐ SURFACE WATER ☐ OTHER

WELL DEPTH (TOC) ~22 FT. | DEPTH TO WATER BEFORE PURGING (TOC) 14.49 FT.

LENGTH OF WATER 5.51 FT. | CALCULATED ONE WELL VOLUME[1]: ~.90 GAL.

PURGING DEVICE: ☐ DEDICATED ☐ DISPOSABLE ☐ DECONTAMINATED

SAMPLING DEVICE: ☐ DEDICATED ☐ DISPOSABLE ☐ DECONTAMINATED

EQUIP. DECON. ☐ TAP WATER WASH ☐ ISOPROPANOL ☐ ANALYTE FREE FINAL RINSE
☐ ALCONOX WASH ☐ DIST/DEION 1 RINSE ☐ OTHER SOLVENT ☐ DIST/DEION FINAL RINSE
☐ LIQUINOX WASH ☐ DIST/DEION 2 RINSE ☐ TAP WATER FINAL RINSE ☐ AIR DRY

CONTAINER PRESERVATION: ☐ LAB PRESERVED ☐ FIELD PRESERVED

WATER ANALYZER MODEL & SERIAL NO:

ACTUAL TIME (MIN)	CUMUL. VOLUME PURGED (GAL)	TEMP ☐ °F ☐ °C	SPECIFIC CONDUCT.	pH	DISS. OXYGEN	TURBIDITY (NTUs)	WATER APPEAR CL=CLEAR CO=CLOUDY TU=TURBID	REMARKS (EVIDENT ODOR, COLOR, PID)
0955	INITIAL	19.1	620.2	7.28				
1001	1.0	19.6	609.8	6.52				
1004	2.0	19.5	616.3	6.54				
1008	3.0	19.4	619.0	6.47				

DEPTH TO WATER AFTER PURGING (TOC) FT. | SAMPLE FILTERED ☐ YES ☐ NO SIZE _____

NOTES:

SAMPLE TIME: 1010 ID# MW-3

DUPLICATE ☐ TIME: ID#:

EQUIP. BLANK: ☐ TIME: ID#:

PREPARED BY:

[1] A 1 FOOT LENGTH OF WATER = 0.05 GAL IN 1" DIA. PIPE 0.17 GAL IN 2" DIA PIPE 0.65 GAL IN 4" DIA PIPE 1.5 GAL IN 6" DIA PIPE

WELL PURGING AND SAMPLING DATA

WELL NO: MW-2

DATE: 4-8-00 | PROJECT NAME: CALTRANS 6th + CASTRO | PROJECT NO: 96034

WEATHER CONDITIONS: CLOUDY, COOL

WELL DIAMETER (IN.) ☐ 1 ■ 2 ☐ 4 ☐ 6 ☐ OTHER _____

SAMPLE TYPE: ■ GROUNDWATER ☐ WASTEWATER ☐ SURFACE WATER ☐ OTHER

22.42
14.02
8.40

WELL DEPTH (TOC) 22.42 FT. | DEPTH TO WATER BEFORE PURGING (TOC) 14.02 FT.

LENGTH OF WATER 8.40 FT. | CALCULATED ONE WELL VOLUME[1]: ~1.5 GAL.

PURGING DEVICE: ☐ DEDICATED ☐ DISPOSABLE ■ DECONTAMINATED

SAMPLING DEVICE: ☐ DEDICATED ☐ DISPOSABLE ■ DECONTAMINATED

EQUIP. DECON. ☐ TAP WATER WASH ☐ ISOPROPANOL ☐ ANALYTE FREE FINAL RINSE
■ ALCONOX WASH ☐ DIST/DEION 1 RINSE ☐ OTHER SOLVENT ☐ DIST/DEION FINAL RINSE
☐ LIQUINOX WASH ■ DIST/DEION 2 RINSE ☐ TAP WATER FINAL RINSE ☐ AIR DRY

CONTAINER PRESERVATION: ■ LAB PRESERVED ☐ FIELD PRESERVED

WATER ANALYZER MODEL & SERIAL NO: MYRON L 602 155

ACTUAL TIME (MIN)	CUMUL. VOLUME PURGED (GAL)	TEMP ☐ °F ☐ °C	SPECIFIC CONDUCT.	pH	DISS. OXYGEN	TURBIDITY (NTUs)	WATER APPEAR CL=CLEAR CO=CLOUDY TU=TURBID	REMARKS (EVIDENT ODOR, COLOR, PID)
0910	INITIAL	20.2	406.2	7.10				
0921	1.5	19.9	889.6	6.56				
0928	3.0	19.7	930.2	6.64				
0934	5.5	19.8	928.7	6.64				

DEPTH TO WATER AFTER PURGING (TOC) _____ FT. | SAMPLE FILTERED ☐ YES ☐ NO SIZE _____

NOTES:

SAMPLE TIME: 0935 ID# MW-2

DUPLICATE ☐ TIME: ID#:

EQUIP. BLANK: ☐ TIME: ID#:

PREPARED BY:

[1] A 1 FOOT LENGTH OF WATER = 0.05 GAL IN 1" DIA. PIPE 0.17 GAL IN 2" DIA PIPE 0.65 GAL IN 4" DIA PIPE 1.5 GAL IN 6" DIA PIPE

WELL PURGING AND SAMPLING DATA

WELL NO: MW-1

DATE: 8-8-00 | PROJECT NAME: CALTRANS 6th & CASTRO | PROJECT NO: 96034

WEATHER CONDITIONS: CLOUDY, WARM

WELL DIAMETER (IN.) ☐ 1 ■ 2 ☐ 4 ☐ 6 ☐ OTHER _____

SAMPLE TYPE: ■ GROUNDWATER ☐ WASTEWATER ☐ SURFACE WATER ☐ OTHER

23.24
18.70
.54

WELL DEPTH (TOC) 23.24 FT. | DEPTH TO WATER BEFORE PURGING (TOC) 18.70 FT.

LENGTH OF WATER 4.54 FT. | CALCULATED ONE WELL VOLUME[1]: ~ .8 GAL.

PURGING DEVICE: ☐ DEDICATED ■ DISPOSABLE ☐ DECONTAMINATED

SAMPLING DEVICE: ☐ DEDICATED ■ DISPOSABLE ☐ DECONTAMINATED

EQUIP. DECON. ☐ TAP WATER WASH ☐ ISOPROPANOL ☐ ANALYTE FREE FINAL RINSE
■ ALCONOX WASH ☐ DIST/DEION 1 RINSE ☐ OTHER SOLVENT ☐ DIST/DEION FINAL RINSE
☐ LIQUINOX WASH ■ DIST/DEION 2 RINSE ☐ TAP WATER FINAL RINSE ☐ AIR DRY

CONTAINER PRESERVATION: ■ LAB PRESERVED ☐ FIELD PRESERVED

WATER ANALYZER MODEL & SERIAL NO: MYRON L 602155

ACTUAL TIME (MIN)	CUMUL. VOLUME PURGED (GAL)	TEMP ☐ °F ☐ °C	SPECIFIC CONDUCT.	pH	DISS. OXYGEN	TURBIDITY (NTUs)	WATER APPEAR CL=CLEAR CO=CLOUDY TU=TURBID	REMARKS (EVIDENT ODOR, COLOR, PID)
1025	INITIAL	18.7	860.1	7.11				
1029	.8	18.7	900.0	6.63				
1033	2.0	18.7	926.0	6.75				
1035	3.0	18.7	954.0	6.85				

DEPTH TO WATER AFTER PURGING (TOC) FT. | SAMPLE FILTERED ☐ YES ☐ NO SIZE _____

NOTES:

SAMPLE TIME: 1050 ID# MW-1

DUPLICATE ■ TIME: 1130 ID#: MW-10

EQUIP. BLANK: ☐ TIME: ID#:

PREPARED BY:

[1] A 1 FOOT LENGTH OF WATER = 0.05 GAL IN 1" DIA. PIPE 0.17 GAL IN 2" DIA PIPE 0.65 GAL IN 4" DIA PIPE 1.5 GAL IN 6" DIA PIPE

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: PSI
1320 W. Winton Ave.
Hayward, CA 94545

Date Sampled: 08/08/00
Date Received: 08/09/00
Job Number: 16881

Project: Caltrans 6th & Castro

CASE NARRATIVE

The following information applies to samples which were received on 08/09/00 :

The samples were received at the laboratory chilled.
Not all of the sample containers were intact upon arrival at the laboratory.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 2419

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

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Lead by ICP

Client:	PSI	Date Sampled:	08/08/00
Project:	Caltrans 6th & Castro	Date Received:	08/09/00
Job No.:	16881	Date Digested:	08/09/00
Matrix:	Water	Date Analyzed:	08/10/00
Analyst:	RLB	Batch Number:	6010W1679
		Method Number:	6010B

	Reporting Limit	Lead
Sample ID	mg/L	mg/L
Method Blank	0.015	ND
MW-1	0.015	ND
MW-2	0.015	ND
MW-3	0.015	ND
MW-10	0.015	ND

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QC Sample Report - Metals

Matrix: Water
Batch #: 6010W1679

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	1.0	101.4	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 16878-24

Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	1.014	0.975	4%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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EPA 413.2 - Oil & Grease

Client:	PSI	Date Sampled:	08/08/00
Project:	Caltrans 6th & Castro	Date Received:	08/09/00
Job No.:	16881	Date Extracted:	08/16/00
Matrix:	Water	Date Analyzed:	08/16/00
Analyst:	MAE	Batch Number:	4181W1208

	Detection Limit	Total Oil & Grease
Sample ID	mg/L	mg/L
Method Blank	2.0	ND
MW-1	2.0	ND
MW-2	2.0	8.8
MW-3	2.0	ND
MW-10	2.0	ND

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QC Report - EPA 413.2 Oil & Grease

Matrix: Water
Batch #: 4181W1208

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	10	88	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Reference Oil	8.8	9.2	4%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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Modified 8015 - Total Extractable Petroleum Hydrocarbons as Diesel

Client:	PSI	Date Sampled:	08/08/00
Project:	Caltrans 6th & Castro	Date Received:	08/09/00
Job No.:	16881	Date Extracted:	08/10/00
Matrix:	Water	Date Analyzed:	08/10-11/00
Analyst:	JL	Batch Number:	8015DW1995

	Detection Limit	Diesel	Surrogate (OTP)
Sample ID	mg/L	mg/L	Limit: 50 - 150%
Method Blank	0.40	ND	77 %
MW-1	0.40	ND	98 %
MW-2	0.40	ND	111 %
MW-3	0.40	ND	107 %
MW-10	0.40	ND	107 %

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QC Sample Report - EPA 8015M Diesel

Matrix: Water
Batch #: 8015DW1995

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	0.8	73	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Diesel	0.58	0.6	3%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Modified 8015 - Total Volatile Hydrocarbons as Gasoline

Client:	PSI	Date Sampled:	08/08/00
Project:	Caltrans 6th & Castro	Date Received:	08/09/00
Job No.:	16881	Date Analyzed:	08/14-15/00
Matrix:	Water	Batch Number:	8015GW2687
Analyst:	CP		

	Detection Limit	**Petroleum Hydrocarbons as Gasoline**
Sample ID	mg/L	mg/L
Method Blank	0.5	ND
MW-1	0.5	ND
MW-2	0.5	37
MW-3	0.5	ND
MW-10	0.5	ND

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QC Sample Report - EPA 8015M Gasoline

Matrix: Water
Batch #: 8015GW2687

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Gasoline	10.0	97	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Gasoline	9.72	8.82	10%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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EPA 8260 - Volatile Organics with Oxygenates

Client: PSI
Project: Caltrans 6th & Castro
Job No.: 16881
Matrix: Water
Analyst: MBH

Date Sampled: 08/08/00
Date Received: 08/09/00
Date Analyzed: 08/11/00
Batch Number: MS48260W2212

	Sample ID:	Blank	MW-1	MW-3	MW-10
Compounds	**DL**	µg/L	µg/L	µg/L	µg/L
Acetone	50	ND	ND	ND	ND
tert-Amyl Methyl Ether (TAME)	5.0	ND	ND	ND	ND
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	1.0	ND	ND	ND	ND
Bromochloromethane	1.0	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
tert-Butanol (TBA)	50	ND	ND	ND	ND
2-Butanone (MEK)	10	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon disulfide	10	ND	ND	ND	ND
Carbon tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND	ND
Dibromomethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	ND	ND	ND	ND
1,1-Dichloroethane	0.5	ND	ND	ND	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND
1,1-Dichloroethene	0.5	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.5	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND

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EPA 8260 - Volatile Organics with Oxygenates

Client:	PSI	Date Sampled:	08/08/00
Project:	Caltrans 6th & Castro	Date Received:	08/09/00
Job No.:	16881	Date Analyzed:	08/11/00
Matrix:	Water	Batch Number:	MS48260W2212
Analyst:	MBH		

	Sample ID:	Blank	MW-1	MW-3	MW-10
Compounds	**DL**	µg/L	µg/L	µg/L	µg/L
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND
Diisopropyl Ether (DIPE)	5.0	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Ethyl tert-Butyl Ether (EtBE)	5.0	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
2-Hexanone	10	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene chloride	20	ND	ND	ND	ND
4-Methyl-2-pentanone	5.0	ND	ND	ND	ND
Methyl-tert-butyl ether (MtBE)	1.0	ND	ND	ND	ND
Napthalene	0.5	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND	ND	ND
Tetrachloroethene	0.5	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND	ND	ND
Trichloroethene	0.5	ND	ND	ND	ND
1,2,3-Trichloropropane	0.5	ND	ND	ND	ND
Trichlorofluoromethane	0.5	ND	ND	ND	ND
Trichlorotrifluoroethane	5.0	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl chloride	0.5	ND	ND	ND	ND
Xylenes (total)	1.5	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	MW-1	MW-3	MW-10
Dibromofluoromethane	108	110	109	112
Toluene-d8	106	105	106	104
Bromofluorobenzene	100	101	101	102

EPA 8260 - Volatile Organics with Oxygenates

Client:	PSI	Date Sampled:	08/08/00
Project:	Caltrans 6th & Castro	Date Received:	08/09/00
Job No.:	16881	Date Analyzed:	08/11/00
Matrix:	Water	Batch Number:	MS48260W2212
Analyst:	MBH		

	Sample ID:	MW-2
Compounds	**DL**	µg/L
Acetone	2500	ND
tert-Amyl Methyl Ether (TAME)	250	ND
Benzene	25	**700**
Bromobenzene	50	ND
Bromochloromethane	50	ND
Bromodichloromethane	25	ND
Bromoform	25	ND
Bromomethane	25	ND
tert-Butanol (TBA)	2500	ND
2-Butanone (MEK)	500	ND
n-Butylbenzene	25	**170**
sec-Butylbenzene	25	ND
tert-Butylbenzene	25	ND
Carbon disulfide	500	ND
Carbon tetrachloride	25	ND
Chlorobenzene	25	ND
Chloroethane	25	ND
Chloroform	25	ND
Chloromethane	25	ND
2-Chlorotoluene	25	ND
4-Chlorotoluene	25	ND
Dibromochloromethane	25	ND
1,2-Dibromoethane	25	ND
1,2-Dibromo-3-chloropropane	500	ND
Dibromomethane	25	ND
1,2-Dichlorobenzene	25	ND
1,3-Dichlorobenzene	25	ND
1,4-Dichlorobenzene	25	ND
Dichlorodifluoromethane	25	ND
1,1-Dichloroethane	25	ND
1,2-Dichloroethane	25	**69**
1,1-Dichloroethene	25	ND
cis-1,2-Dichloroethene	25	ND
trans-1,2-Dichloroethene	25	ND
1,2-Dichloropropane	25	ND
1,3-Dichloropropane	25	ND
2,2-Dichloropropane	25	ND
1,1-Dichloropropene	25	ND

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EPA 8260 - Volatile Organics with Oxygenates

Client:	PSI	Date Sampled:	08/08/00
Project:	Caltrans 6th & Castro	Date Received:	08/09/00
Job No.:	16881	Date Analyzed:	08/11/00
Matrix:	Water	Batch Number:	MS48260W2212
Analyst:	MBH		

	Sample ID:	MW-2
Compounds	**DL**	µg/L
cis-1,3-Dichloropropene	25	ND
trans-1,3-Dichloropropene	25	ND
Diisopropyl Ether (DIPE)	250	ND
Ethylbenzene	25	**2,400**
Ethyl tert-Butyl Ether (EtBE)	250	ND
Hexachlorobutadiene	25	ND
2-Hexanone	500	ND
Isopropylbenzene	25	**74**
p-Isopropyltoluene	25	ND
Methylene chloride	1000	ND
4-Methyl-2-pentanone	250	ND
Methyl-tert-butyl ether (MtBE)	50	ND
Napthalene	25	**860**
n-Propylbenzene	25	**270**
Styrene	25	ND
1,1,1,2-Tetrachloroethane	25	ND
1,1,2,2-Tetrachloroethane	50	ND
Tetrachloroethene	25	ND
Toluene	25	**4,300**
1,2,3-Trichlorobenzene	25	ND
1,2,4-Trichlorobenzene	25	ND
1,1,1-Trichloroethane	25	ND
1,1,2-Trichloroethane	25	ND
Trichloroethene	25	ND
1,2,3-Trichloropropane	25	ND
Trichlorofluoromethane	25	ND
Trichlorotrifluoroethane	250	ND
1,2,4-Trimethylbenzene	25	**1,900**
1,3,5-Trimethylbenzene	25	**550**
Vinyl chloride	25	ND
Xylenes (total)	75	**11,000**

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	MW-2
Dibromofluoromethane	109
Toluene-d8	103
Bromofluorobenzene	103

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QC Sample Report - EPA Method 8260

Matrix: Water
Batch #: MS48260W2212

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration µg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20	**94**	59 - 172	**Pass**
Benzene	20	**112**	66 - 142	**Pass**
Trichloroethene	20	**115**	71 - 137	**Pass**
Toluene	20	**107**	59 - 139	**Pass**
Chlorobenzene	20	**96**	60 - 133	**Pass**

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	18.84	19.98	**6%**	22%	**Pass**
Benzene	22.65	22.95	**1%**	21%	**Pass**
Trichloroethene	23.20	24.05	**4%**	24%	**Pass**
Toluene	21.71	22.67	**4%**	21%	**Pass**
Chlorobenzene	19.37	20.21	**4%**	21%	**Pass**

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Centrum Analytical Laboratories, Inc.

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lab@centrum-labs.com

Chain of Custody Record

Centrum Job # 160881

Page 1 of 1

Project No:	Project Name:
96034	CALTRANS 6th & CASTRO
Project Manager:	**Phone:** 510 785-1111 **Fax:** 510 785-1192
Client Name: (Report and Billing) PSI	**Address:** (Report and Billing) 1320 W. WINTON AVE HAYWARD, CA 94545

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel/Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)	Waiver Requested	GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB	Pb	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions
1	MW-1	8-8-00	1050			2L, 1PLAS 4 VOA	X	X		X		X					X					2 VOAS REC'D BROKEN.
2	MW-2		0935				X	X		X		X					X					
3	MW-3		1010				X	X		X		X					X					1 VOA REC'D BROKEN
4	MW-10		1130				X	X		X		X					X					

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ■ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

Remarks/Special Instructions

	Date:	Time:
1) Relinquished by: (Sampler's Signature) CHRIS MERRITT	8-8-00	1700
2) Received by:	Date:	Time:
3) Relinquished by:	Date:	Time:
4) Received by:	Date:	Time:
5) Relinquished by:	Date:	Time:
6) Received for Laboratory by:	Date: 8/9	Time: 9:00

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:

Samples chilled? ☒ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☒ No

All sample containers intact? ☐ Yes ☒ No

☐ Courier ☒ UPS/Fed Ex ☐ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Laboratory Notes: FILTER METAL SAMPLES PRIOR TO ANALYSIS

Sample Locator No.

VOA
E-3*

v3.2 1/00 coc-temp.xls

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy