ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
OFFICE OF THE DIRECTOR
1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502
(510) 567-6777
FAX (510) 337-9135

June 9, 2010

Mr. Ray Boyer
Caltrans
111 Grand Avenue
Oakland, CA 94612

Hank Ackerman
Alameda County Flood Control
399 Elmhurst Street
Hayward, CA 94544

Subject: Subject: Fuel Leak Case, RO0000503, Caltrans Oakland Maintenance Station, 3465 Ettie Street, Oakland, CA 94608

Dear Mr. Boyer and Mr. Ackerman:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Residual pollution remaining in soil beneath the site includes TPH as diesel at concentrations of up to 64,000 ppm and TPH as oil and grease up to 5,200 ppm.
- Maximum concentrations of up to 2,300,000 ppb TPH as motor oil remain in groundwater beneath the site.

If you have any questions, please call Barbara at (510) 639-1287. Thank you.

Sincerely,

Donna L. Drogos, P.E.
LOP and Toxics Program Manager

Enclosures:
1. Remedial Action Completion Certificate
2. Case Closure Summary

cc:

Ms. Cherie McCaulou (w/enc) (via electronic mail: cmccaulou@waterboards.ca.gov)
SF- Regional Water Quality Control Board

Closure Unit (w/enc)
State Water Resources Control Board
UST Cleanup Fund
P.O. Box 944212
Sacramento, CA 94244-2120

Leroy Griffin (w/enc via electronic mail: lgriffin@oaklandnet.com)
Oakland, Fire Department

Barbara Jakub (w/ enc via e-mail), D. Drogos (w/ enc via e-mail), T. LeKhan (w/orig enc)

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June 9, 2010

Mr. Ray Boyer
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111 Grand Avenue
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Hank Ackerman
Alameda County Flood Control
399 Elmhurst Street
Hayward, CA 94544

REMEDIAL ACTION COMPLETION CERTIFICATE

Subject: Fuel Leak Case, RO0000503, Caltrans Oakland Maintenance Station, 3465 Ettie Street, Oakland, CA 94608

Dear Mr. Boyer and Mr. Ackerman:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Ariu Levi
Director
Alameda County Environmental Health

Alameda County Environmental Health

CASE CLOSURE SUMMARY
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM

I. AGENCY INFORMATION

Date: June 3, 2010

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 639-1287
Responsible Staff Person: Barbara Jakub	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: Caltrans Oakland Maintenance Station		
Site Facility Address: 3465 Ettie Street, Oakland, CA 94608		
RB Case No.: 01-2319	STID No.: 3980	LOP Case No.: RO0000503
URF Filing Date: 02/01/1996	Geotracker ID: T0600102133	APN: 7-606-1-1

Responsible Parties	Addresses	Phone Numbers
Ray Boyer Caltrans	111 Grand Ave, Oakland, CA 94612	(510)286-5668
Hank Akerman Alameda County Flood Control	399 Elmhurst St, Hayward, CA 94544	(510)670-5553

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
1	4,000	Diesel	Removed	10/20/1995
2	7,500	Gasoline	Removed	10/20/1995
Piping			Removed	10/20/1995

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: UST appeared intact upon removal. However, soil beneath dispenser reported to be significantly contaminated.		
Site characterization complete? Yes	Date Approved By Oversight Agency: -----	
Monitoring wells installed? Yes	Number: 4	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 7.13 ft bgs	Lowest Depth: 8.23 ft bgs	Flow Direction: West/northwest to South/southeast
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity: No water supply wells were identified within ¼-mile of the subject site. Two cathodic protection wells are located within 2,000 feet of the site. The closest well, well 1S/4W 22Q is located approximately 1,700 feet to the southeast, which is cross-gradient to up gradient of the site. It is unlikely that either well is a receptor due to their location and distance from the site.	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: San Francisco Bay ½-mile NW
Off-Site Beneficial Use Impacts (Addresses/Locations): None	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health and City of Oakland Fire Department

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	1-4,000 gallon diesel 1-7,500- gasoline	Disposed – Erickson, Richmond, CA	10/20/1995
Piping	<20 feet	Disposed – Erickson, Richmond, CA	10/20/1995
Free Product	---	---	---
Soil	290 yd^3 mostly pea gravel 20 tons treated off-site	Excavated, sampled, placed back in tank pits Treated at REMCO, Richmond, CA	10/20/1995 4/16/96
Groundwater	---	---	---

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments 1 through 6 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	<1.0	<1.0	<500	<50
TPH (Diesel)	64,000	64,000	<62,500	<62,500
TPH (Motor Oil)	560	560	2,300,000[1] (TW-2)	2,300,000[1] (TW-2)
Oil and Grease	5,200	5,200	<500	<500
Benzene	<0.005	<0.005	1.1	<0.5
Toluene	<0.005	<0.005	0.5	<0.5
Ethylbenzene	<0.005	<0.005	1.2	<0.5
Xylenes	<0.005	<0.005	1.4	<1.0
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	38^	38^	<0.005^^	<0.005^^
MTBE	<0.005*	<0.005*	260**	260**
Other (8240/8270)	0.03[+]	0.03[+]	<5.0[++]	<5.0[++]

[1] Grab groundwater data from source area. Laboratory note states that TPH in motor oil range did not match typical motor oil pattern. Monitoring wells surrounding source area <500 µg/L TOG, TPHd and TPHg (TPHmo not analyzed.)

^ 0.61 ppm Cd; 29 ppm Cr; 38 ppm Pb; 36 ppm Ni; 120 ppm Zn

* <0.005 mg/kg MTBE; TBA, TAME, ETBE, DIPE, EtOH, EDB and EDC all not analyzed.

** 260 ppb MTBE; <100 ppb TBA; <5.0 ppb TAME; <5.0 ppb ETBE; <5.0 ppb DIPE; <100 ppb EtOH ; <0.5 ppb EDB; and <0.5 ppb EDC

[+] 0.03 ppm tetrachloroethene, 0.025 mg/kg 1,2,4 trimethylbenzene, and 0.0078 mg/kg 1,3,5 trimethylbenzene. No other VOCs or SVOCs were detected in soil.

[++] No VOCs or SVOCs were detected in groundwater from any of the wells.

Site History and Description of Corrective Actions:

The site is situated beneath Highway 580 in an industrial area of Oakland. The USTs were located between freeway columns.

On October 19 and 20, 1995 two USTs (one-4,000-gallon gasoline and one 7,000-gallon diesel) were removed from the site. Confirmation samples contained 64,000 mg/kg TPHd (dispenser sample) and 560 mg/kg TPHoil. Tank pit water samples contained 170 µg/L TPHoil and 2,000 µg/L TPHd. No benzene was detected in any sample. MTBE was detected in the water sample collected from the gasoline UST excavation at a concentration of 260 µg/L. The pea gravel was sampled and reused. A small portion of soil (20.6 tons) was removed from the site.

Two soil borings were advanced downgradient of the USTs on February 8, 1996. Soil samples contained 1,200 mg/kg TPHoil in TW-1 and groundwater samples contained 2,300,000 µg/L TPHoil from TW-2. TPHd was not detected with a reporting limit of 62,500 µg/L. TW-2 is located at a freeway column for Highway 580.

On July 29, 1997, six borings were advanced four of which were converted to monitoring wells. Total oil and grease was detected in soil at a maximum concentration of 5,200 mg/kg. Tetrachloroethene was detected at 0.03 mg/kg in sample B4-5 and 0.025 mg/kg 1,2,4 trimethylbenzene and 0.0078 mg/kg 1,3,5 trimethylbenzene were detected in B4-10. No other VOCs were detected in soil. Benzene was detected in a groundwater sample from MW-1 at a concentration of 1.1 µg/L. No TPHg, TPHd, TOG, MTBE or other VOCs were detected. Subsequent groundwater monitoring occurred for a total of 3 quarters. MTBE was detected at 95 ppb, no other constituents were detected in the wells. Well MW-2 was located less than 15 feet in the downgradient direction from TW-2. Groundwater samples from this well were below the detection limit for TPHg, TPHd, BTEX, MTBE indicating that the contamination is not laterally extensive.

The monitoring wells were last sampled March 13, 1998 and shortly afterward destroyed. No monitoring well destruction report was provided at the time of decommissioning.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements: Case closure for this fuel leak site is granted for the current industrial land use as a freeway only. If a change in land use to any other land use including commercial, residential or other conservative land use scenario occurs at this site, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans. Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities. This site is to be entered into the City of Oakland Permit Tracking System due to the residual contamination on site.		
Should corrective action be reviewed if land use changes? Yes		
Was a deed restriction or deed notification filed? No		Date Recorded: ---
Monitoring Wells Decommissioned: Yes	Number Decommissioned: 4	Number Retained: 0
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: None		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

- Residual petroleum hydrocarbon contamination in soil and groundwater remains in place at this site particularly immediately adjacent to one of the freeway columns. Borings and wells in the area indicate that the contamination is not laterally extensive.
- A portion of excavated soil reused in UST excavations. Only 20 tons disposed off-site.
- Overexcavation of contaminated soil not performed and groundwater not extracted from excavation.

Conclusion:
Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment under the current industrial land use based upon the information available in our files to date. No further investigation or cleanup for the fuel leak case is necessary unless a change in land use to any use other than industrial occurs at the site. ACEH staff recommend closure for this site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Barbara Jakub, P.G.	Title: Hazardous Materials Specialist
Signature: Barbara Jakub	Date: 6/3/10
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature: Donna L. Drogos	Date: 06/04/10

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: 6/4/2010	

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: 4/29/10	Date of Well Decommissioning Report:	
All Monitoring Wells Decommissioned: Yes	Number Decommissioned: 4	Number Retained: 0
Reason Wells Retained: None retained.		
Additional requirements for submittal of groundwater data from retained wells: None		
ACEH Concurrence - Signature: Barbara Jakub		Date: 6/10/10

Attachments:

1. Site Vicinity Map (A pp1)
2. Site Plans (B pps2-5)
3. Soil Analytical Data (C pps6-10)
4. Groundwater Analytical Data (D pps11-12)
5. Boring Logs (E pps13-18)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.

Jakub, Barbara, Env. Health

From: Cherie MCcaulou [CMccaulou@waterboards.ca.gov]
Sent: Tuesday, June 08, 2010 3:29 PM
To: Jakub, Barbara, Env. Health
Subject: Re: RO503 and RO2447 Closure Summaries

Barbara - Thanks for the notification. We have no objection to ACEH's recommendation for case closure of RO0000503 and RO0002447.

Sincerely,

Cherie McCaulou
Engineering Geologist
San Francisco Bay Regional Water Quality Control Board
cmccaulou@waterboards.ca.gov
510-622-2342

>>> "Jakub, Barbara, Env. Health" <barbara.jakub@acgov.org> 6/4/2010 1:23 PM >>>
Cherie,
Attached are two closure summaries for RO503: Caltrans Oakland Maintenance Station located at 3465 Ettie St., Oakland and RO2447: WE Lyons Construction Company located at 50 Hegenberger Loop, Oakland, CA to comply with the RWQCB's 30-day review period. If no comments are received within the 30-day period, ACEH will proceed with case closure.
Please contact me should you have any comments or questions regarding the subject sites.
Regards,

Barbara Jakub, P.G.
Alameda County Environmental Health
(510) 639-1287 (direct)
(510) 337-9335 (fax)
barbara.jakub@acgov.org

Online case files are available at the website below
http://www.acgov.org/aceh/lop/resources.htm

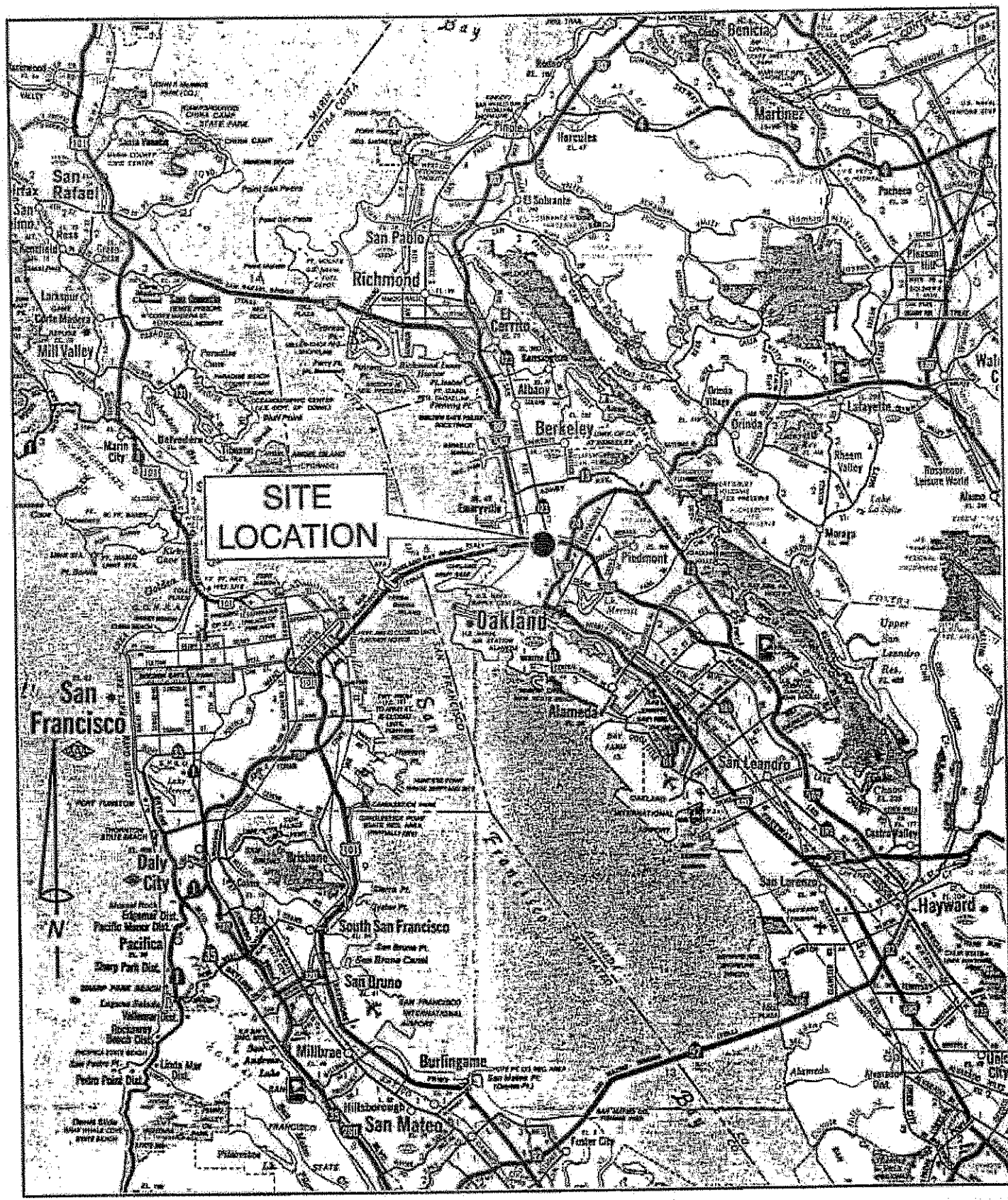
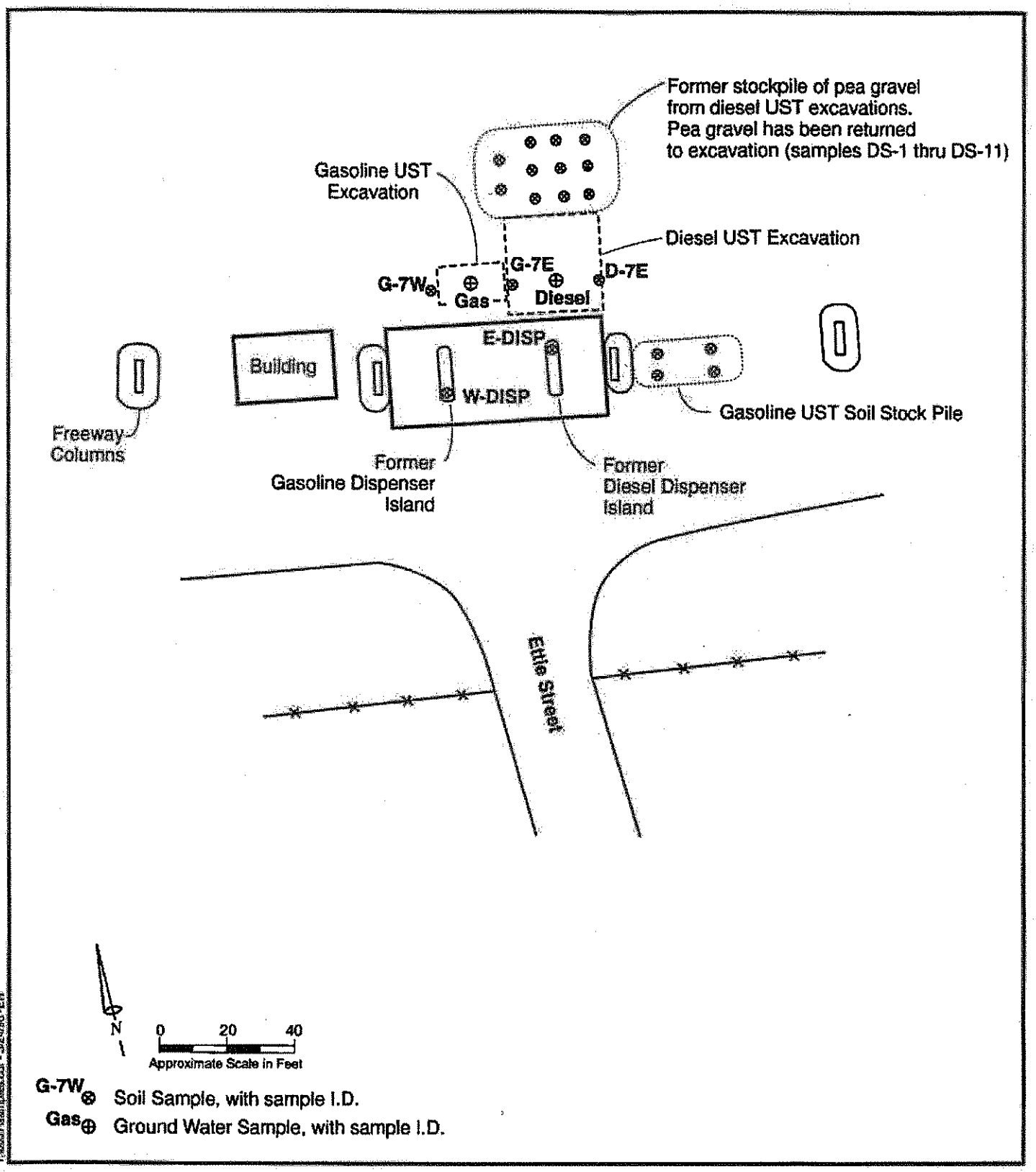


Figure 1-1 Regional Site Location

Scale: 1" = 4 miles

ATTACHMENT 1



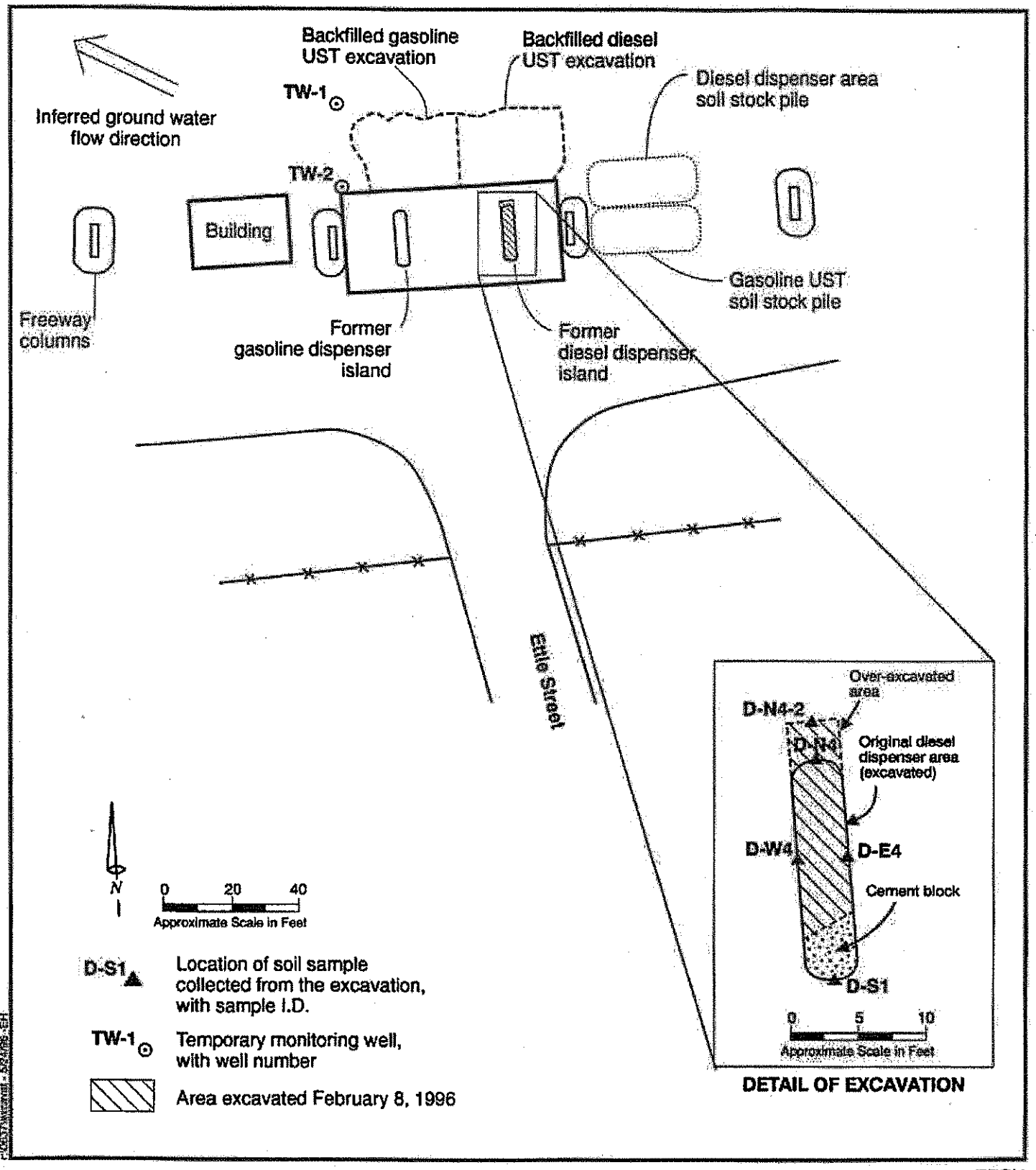
TETRA TECH

Site Plan Showing Locations of Soil and Ground Water Samples Collected October 19 and 20, 1995

Caltrans Ettie Street Maintenance Facility
Oakland, California

Figure 2-1

ATTACHMENT 2

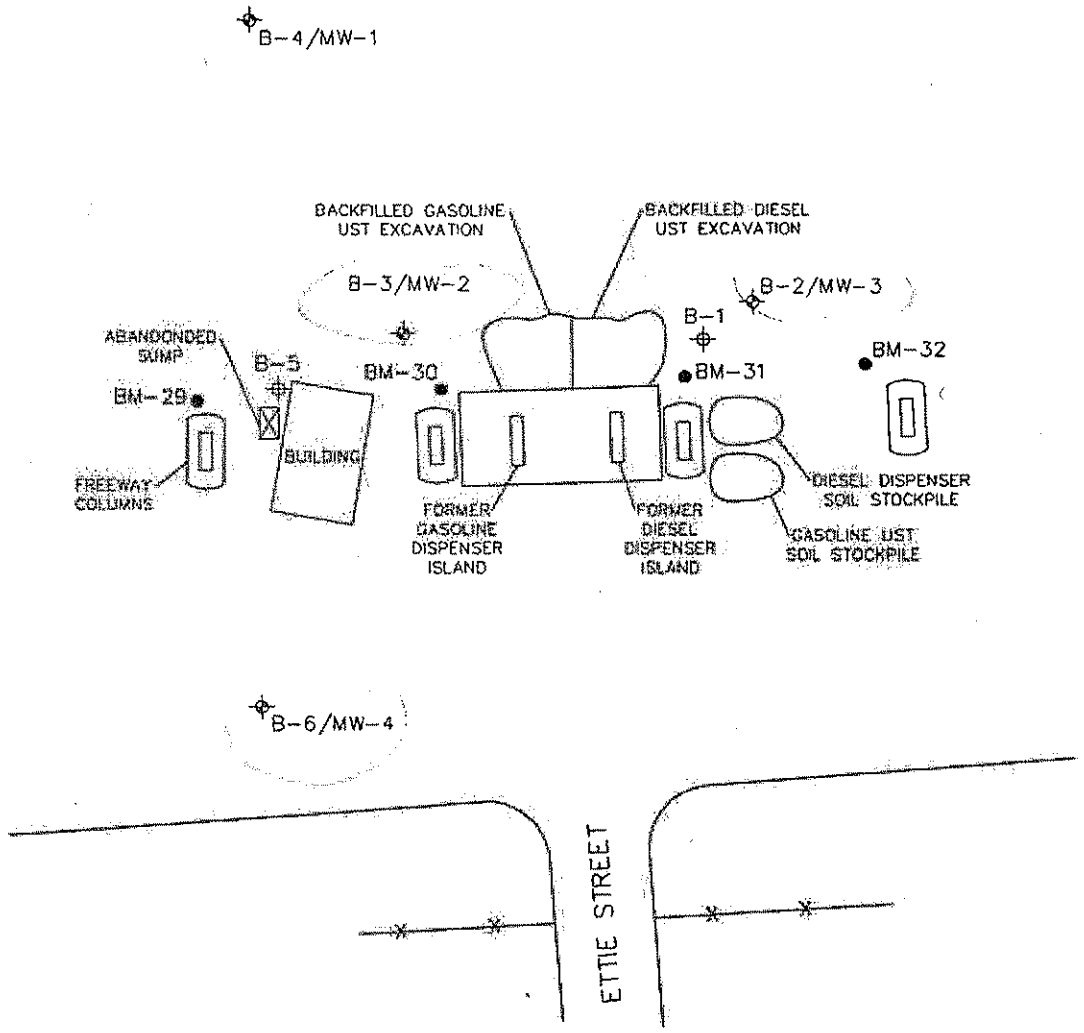


TETRA TECH

Site Plan Showing Locations of Temporary Monitoring Wells and Excavation Sampled February 8, 1996

Caltrans Ettie Street Maintenance Facility
Oakland, California

Figure 3-1



LEGEND

B-1 BORING LOCATION AND DESIGNATION

B-2/MW-3 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

BM-29 PSI BORING (APRIL 4, 1996)

NORTH

0 15 30 60

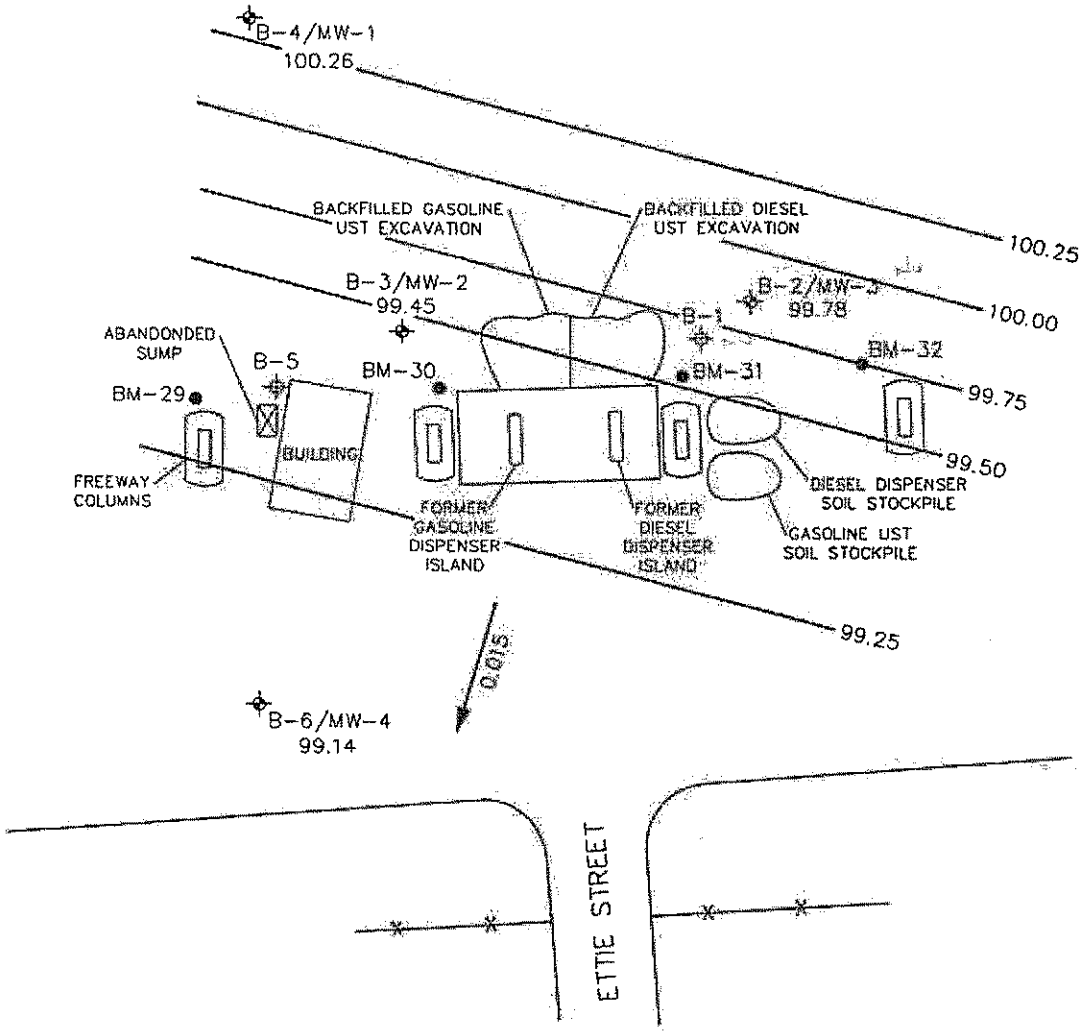
SCALE IN FEET

ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION

CONSULTING • ENGINEERING • TESTING

SITE PLAN
CALTRANS MAINTENANCE STATION
3456 ETTIE STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-71022

DATE: 10/06/97	CKD BY:	FIGURE NO.: 2
FILE NO: 71022-28		DRAWN BY: L.KOCHIAN



LEGEND

- B-1 — BORING LOCATION AND DESIGNATION
- B-2/MW-3 99.45 — GROUNDWATER MONITORING WELL LOCATION DESIGNATION AND GROUNDWATER ELEVATION
- BM-29 — PSI BORING (APRIL 4, 1996)
- 99.50 — GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION AND GRADIENT

NORTH

0 15 30 60

SCALE IN FEET

PSI ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

GROUNDWATER ELEVATION AND GRADIENT MAP
CALTRANS MAINTENANCE STATION
3456 ETTIE STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-71022

DATE: ~~10/09~~ 9/5/97	CKD BY:	FIGURE NO.: 3
FILE NO: 71022-3		DRAWN BY: L.KOCHIAN

Table 1
Analytical results for soil samples collected October 19 and 20, 1995, at Caltrans' Ettie Street Maintenance Facility
3465 Ettie Street, Oakland, California

Sample ID	Date Collected	TPH-oil (8015 mod) (mg/kg)	TPH-d (8015 mod) (mg/kg)	TPH-gas (8015 mod) (mg/kg)	Benzene (8020) (mg/kg)	Toluene (8020) (mg/kg)	Ethylbenzene (8020) (mg/kg)	Xylenes (8020) (mg/kg)	MTBE (8020) (mg/kg)	Lead (7420) (mg/kg)
Samples collected from beneath USTs										
G-7W	10/19/95	na	na	ND	ND	ND	ND	ND	ND	*6.5*
G-7E	10/19/95	*23*	ND	ND	ND	ND	ND	ND	ND	*11*
D-7E	10/19/95	*13*	ND	na	ND	ND	ND	ND	na	na
Samples collected from beneath dispensers										
W-DISP	10/20/95	na	na	ND	ND	ND	ND	ND	ND	*18*
E-DISP	10/20/95	na	*64000*	na	ND	ND	ND	ND	na	na
Sample composited from soil from gasoline UST excavation										
COMP	10/20/95	na	na	ND	ND	ND	ND	ND	ND	*26*
Samples collected from pea gravel removed from around diesel UST										
DS-1	10/19/95	ND	*35*	na	ND	ND	ND	ND	ND	na
DS-2	10/19/95	ND	*71*	na	ND	ND	ND	ND	ND	na
DS-3	10/19/95	ND	*31*	na	ND	ND	ND	ND	ND	na
DS-4	10/19/95	*110*	*39*	na	ND	ND	ND	ND	ND	na
DS-5	10/19/95	*62*	*39*	na	ND	ND	ND	ND	ND	na
DS-6	10/19/95	*29*	*12*	na	ND	ND	ND	ND	ND	na
DS-7	10/19/95	*72*	ND	na	ND	ND	ND	ND	ND	na
DS-8	10/19/95	*560*	ND	na	ND	ND	ND	ND	ND	na
DS-9	10/19/95	*91*	*24*	na	ND	ND	ND	ND	ND	na
DS-10	10/19/95	*49*	ND	na	ND	ND	ND	ND	ND	na
DS-11	10/19/95	*30*	ND	na	ND	ND	ND	ND	ND	na
Method Detection Limit		1.0	1.0	1.0	0.005	0.005	0.005	0.005	0.05	0.5

NOTES:

mg/kg	milligrams per kilogram (ppm)
TPH-oil	total petroleum hydrocarbons quantified as motor oil
TPH-d	total petroleum hydrocarbons quantified as diesel
TPH-g	total petroleum hydrocarbons quantified as gasoline
na	not applicable, analysis not performed for this analyte
ND	analyte not detected (ND) at or above the laboratory reporting limits
COMP	composite of four samples (SP-SW, SP-SE, SP-NW, SP-NE) collected from the soil removed from the gasoline UST excavation

- The confirmation soil sample collected from beneath the gasoline dispenser island (W-DISP) did not contain TPH-g, BTEX compounds, or MTBE above the method detection limits. Total lead content was 18 mg/kg.

- The confirmation soil sample collected from beneath the diesel dispenser island (E-DISP) contained TPH-d at a concentration of 64,000 mg/kg and no BTEX compounds above the method detection limits.

ATTACHMENT 3

Table 3
Analytical results for soil samples collected February 8, 1996 at Caltrans' Ettie Street Maintenance Facility
3465 Ettie Street, Oakland, California

Sample ID	TPH-d (8015 mod) (mg/kg)	Benzene (8020) (mg/kg)	Toluene (8020) (mg/kg)	Ethylbenzene (8020) (mg/kg)	Xylenes (8020) (mg/kg)	Cyanide (9030) (mg/kg)	Sulfide (9030) (mg/kg)	pH (9045) (units)	Flash Point (1010) (°F)
Confirmation samples collected from the excavation beneath the former diesel dispenser island									
D-S1 → 1 ft. bgs	ND	na	na	na	na	na	na	na	na
D-E4	ND	na	na	na	na	na	na	na	na
D-W4 } 4 ft. bgs	ND	na	na	na	na	na	na	na	na
D-N4	*180*	na	na	na	na	na	na	na	na
D-N4-2	ND	na	na	na	na	na	na	na	na
Composite sample collected from the diesel soil stockpile									
SS-NW,NE,SW,SE	*150*	ND	ND	ND	ND	ND	ND	9.1	>200
Method Detection Limit	10	0.005	0.005	0.005	0.005	0.2	0.5	na	na

Sample ID	Cadmium (7130) (mg/kg)	Chromium (7190) (mg/kg)	Lead (7420) (mg/kg)	Soluble Lead* (7420) (mg/l)	Nickel (7520) (mg/kg)	Zinc (7950) (mg/kg)
Composite sample collected from the diesel soil stockpile (cont'd)						
SS-NW,NE,SW,SE	0.61	19	74	2.7	26	120
Method Detection Limit	0.5	0.5	0.5	0.10	0.5	0.5

NOTES:

mg/kg	milligrams per kilogram (ppm)
TPH-d	total petroleum hydrocarbons quantified as diesel
na	not applicable; analysis not performed for this analyte
ND	analyte not detected (ND) at or above the laboratory reporting limits
*	soluble lead extracted following procedures of the California waste extraction test (Cal WET)

3.6 DISPOSAL OF SOIL EXCAVATED FROM BENEATH THE FORMER DIESEL DISPENSER ISLAND

On April 16, 1996, Tetra Tech supervised the loading of the soil onto two roll-off boxes. The soil was transported by Alhambra Environmental Services of Richmond, California, to the rotary kiln disposal facility owned and operated by Remedial Environmental Marketing Company, Inc., in Richmond, California. The weight of the soil was 20.6 tons, indicating a total soil volume of about 16 cubic yards. The soil was remediated by passing it through the rotary kiln. A copy of the nonhazardous waste manifest is included in Appendix B.

Table 4
Analytical results for soil and ground water samples collected February 8, 1996
from soil borings and temporary wells at
Caltrans' Ettie Street Maintenance Facility
3465 Ettie Street, Oakland, California

Sample ID	Depth (feet)	TPH-oil (8015 mod) (mg/kg)	TPH-d (8015 mod) (mg/kg)	TPH-gas (8015 mod) (mg/kg)	Benzene (8020) (mg/kg)	Toluene (8020) (mg/kg)	Ethylbenzene (8020) (mg/kg)	Xylenes (8020) (mg/kg)	Lead (7420) (mg/kg)
Soil samples									
TW1-6.5	6.5-7.0	*1,200*	ND<25	ND	ND	ND	ND	ND	*11*
TW2-09	9.0-9.5	*380*	ND<5	ND	ND	ND	ND	ND	~~20~~
Method Detection Limit		*1.0*	*1.0*	*1.0*	*0.005*	*0.005*	*0.005*	*0.005*	*0.50*

Sample ID	Depth to water (feet)	TPH-oil (8015 mod) (µg/l)	TPH-d (8015 mod) (µg/l)	TPH-gas (8015 mod) (µg/l)	Benzene (8020) (µg/l)	Toluene (8020) (µg/l)	Ethylbenzene (8020) (µg/l)	Xylenes (8020) (µg/l)	Lead (7420) (mg/l)
Ground water samples									
TW1-W1	3.8	*2,400*	ND	*52*	*3.9*	*8.9*	*1.3*	*2.4*	ND
TW2-~~W2~~ W1	3.8	*2,300,000*	ND ~~<62,500~~	ND	ND	ND	ND	ND	ND
Method Detection Limit		50.0	50.0	50.0	*0.5*	*0.5*	*0.5*	*0.5*	*0.005*

NOTES:

µg/kg	milligrams per kilogram (ppm)
TPH-oil	total petroleum hydrocarbons quantified as motor oil
TPH-d	total petroleum hydrocarbons quantified as diesel
TPH-g	total petroleum hydrocarbons quantified as gasoline
na	not applicable, analysis not performed for this analyte
ND	analyte not detected (ND) at or above the laboratory reporting limits

1.3 µg/l ethylbenzene, and 2.4 µg/l total xylenes), and 2,400 µg/l (2.4 mg/l) TPH-oil. Sample TW2-W1 contained no concentrations of TPH-g or BTEX compounds above their respective PQLs but did contain 2,300,000 µg/l (2,300 mg/l) TPH-oil.

4.5 DISPOSAL OF RINSATE FROM DECONTAMINATION

On April 16, 1996, Tetra Tech supervised the removal of the DOT-approved 55-drum in which the rinsate was stored and the contents of the drum, which totaled 37 gallons. The drum and its contents were removed by personnel of Armour Petroleum Service and Equipment Corporation, who transported the rinsate to Solano Community College in Vacaville, California (see Appendix B), where the rinsate will be used in a fire-fighting training program.

TABLE 1
LABORATORY RESULTS FOR SOIL SAMPLES
CALTRANS MAINTENANCE STATION
ETTIE STREET, CALIFORNIA

SAMPLE ID	TPH-G	TPH-D	TOG	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	VOCs	SVOCs
B1-5	<1	<10	20	<0.005	<0.005	<0.005	<0.015	<0.005	---	ND
B1-10	<1	<10	30	<0.005	<0.005	<0.005	<0.015	<0.005	---	ND
B2-5	<1	<10	20	<0.005	<0.005	<0.005	<0.015	<0.005	---	ND
B2-10	<1	<10	10	<0.005	<0.005	<0.005	<0.015	<0.005	---	ND
B3-5	<1	<10	20	<0.005	<0.005	<0.005	<0.015	<0.005	---	ND
B3-10	<1	<10	10	<0.005	<0.005	<0.005	<0.015	<0.005	---	ND
B4-5	<1	<10	5200	<0.005	<0.005	<0.005	<0.015	<0.005	0.03	ND
B4-10	<1	<10	20	<0.005	<0.005	<0.005	<0.015	<0.005	0.033	ND
B5-5	<1	<10	50	<0.005	<0.005	<0.005	<0.015	<0.005	ND	ND
B5-10	<1	<10	10	<0.005	<0.005	<0.005	<0.015	<0.005	ND	ND
B6-5	<1	<10	380	<0.005	<0.005	<0.005	<0.015	<0.005	ND	ND
B6-10	<1	<10	20	<0.005	<0.005	<0.005	<0.015	<0.005	ND	ND

Notes:
All analyses are reported in milligrams per kilogram (mg/kg).
TOG = Total Oil and Grease
TPH-G = total petroleum hydrocarbons as gasoline.
TPH-D = total petroleum hydrocarbons as diesel.
MTBE = Methyl tertiary butyl ether
VOCs = Volatile organic compounds, reported as total concentration of all constituents.
SVOCs = Semi-volatile organic compounds, reported as total concentration of all constituents.
--- = Not analyzed
ND = Not Detected for all constituents analyzed.

TABLE 2

LABORATORY RESULTS FOR SOIL SAMPLES: METALS

CALTRANS MAINTENANCE STATION
ETTIE STREET, CALIFORNIA

SAMPLE	SB	AS	BA	BE	CD	CR	CO	CU	PB	HG	MO	NI	SE	AG	TL	V	ZN
B4-5	<5.0	<5.0	43	<0.5	0.6	16	8.2	44	6.7	0.11	<2.5	17	<2.5	<0.5	8.5	36	49
B4-10	<5.0	<5.0	220	<0.5	<0.5	13	9.6	10	2.7	<0.10	<2.5	33	<2.5	<0.5	<5.0	9	24
B5-5	<5.0	<5.0	120	<0.5	0.6	29	7.6	13	12	0.11	<2.5	36	<2.5	<0.5	<5.0	21	35
B5-10	<5.0	<5.0	98	<0.5	<0.5	14	3.6	9.1	2.6	<0.10	<2.5	35	<2.5	<0.5	<5.0	13	22
B6-5	<5.0	<5.0	100	<0.5	<0.5	21	11	21	38	0.18	<2.5	35	<2.5	<0.5	8	15	73
B6-10	<5.0	<5.0	150	<0.5	<0.5	20	7.9	16	24	<0.10	<2.5	31	<2.5	<0.5	10	20	48
TTLC	500	500	10,000	75	100	500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
STLC	15	5	100	0.75	1	5	80	25	5	0.2	350	20	1	5	7	24	250

Notes:

<0.01 = not detected at or above the laboratory detection limits

Metals are designated by their symbol on the periodic table of elements.

All samples are reported as total concentration in milligrams per kilogram (mg/kg), unless indicated.

TTLC = total threshold limit concentration

STLC = soluable threshold limit concentration.

This indicates that there was a release of diesel fuel in the vicinity of the sample collection point and is the reason why additional soil excavation and confirmatory sampling, as described below in this report, was necessary.

- The composite soil sample collected from the stockpile of soil excavated from around the gasoline UST (COMP) contained no detectable concentration of TPH-g, BTEX compounds, or MTBE. Total lead content is 26 mg/kg, well below concentrations of regulatory concern. Therefore, this soil can be treated as ordinary clean fill material.

- Most of the soil samples collected from the pea gravel removed from around the diesel UST (OS-1-DS-11) contained quantifiable concentrations of TPH-d and TPH-oil. The average concentration of TPH-d was 23.0 mg/kg, and the average concentration of TPH-oil was 91.3 mg/kg. This pea gravel was returned to the tank pit.

2.7.2 Ground Water Samples

The results of ground water sample analyses are summarized in Table 2.

Table 2
Analytical results for petroleum hydrocarbons in grab ground water samples collected October 19, 1995, at Caltrans' Ettie Street Maintenance Facility

Sample ID	TPH-oil (8015 mod) (µg/L)	TPH-d (8015 mod) (µg/L)	TPH-g (8015 mod) (µg/L)	Benzene (602) (µg/L)	Toluene (602) (µg/L)	Ethylbenzene (602) (µg/L)	Xylenes (602) (µg/L)	MTBE (602) (µg/L)	Lead (602) (mg/L)
Gas	na	na	ND	ND	ND	ND	*36*	*260*	ND
Diesel	170*	*2000*	na	ND	ND	ND	ND	na	na
Method Detection Limit	50	50	50	0.5	0.5	0.5	0.5	5.0	0.05

Notes:

TPH-oil	total petroleum hydrocarbons quantified as motor oil.
TPH-d	total petroleum hydrocarbons quantified as diesel
TPH-g	total petroleum hydrocarbons quantified as gasoline
µg/L	micrograms per liter (= ppb)
mg/L	milligrams per liter (= ppm)
na	not applicable, analysis not performed for this analyte
ND	analyte not detected (ND) at or above the laboratory reporting limit
Gas	ID for water sample from pit resulting from removal of gasoline UST
Diesel	ID for water sample from pit resulting from removal of diesel UST
*	TPH in motor oil range does not match typical motor oil pattern (see Appendix C).

- The ground water sample collected from the gasoline UST tank pit (Sample ID = "Gas") contained no TPH-g, benzene, toluene, ethylbenzene, or dissolved lead above the method detection limits. The

ATTACHMENT 4

TABLE 2
LABORATORY RESULTS FOR WATER SAMPLES
CALTRANS MAINTENANCE STATION
ETTIE STREET, CALIFORNIA

SAMPLE ID	DATE	TPH-G	TPH-D	TOG	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	SVOC	VOCs
MW-1	9/5/97	<500	<500	<500	1.1	0.5	1.2	1.4	<0.6	---	ND
MW-2	9/5/97	<500	<500	---	<0.3	<0.3	<0.3	<0.6	<0.6	---	ND
MW-2	12/4/97	<50	---	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	---
MW-2	3/13/98	<50	<5.0	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	ND
MW-3	9/5/97	<500	<500	<500	<0.3	<0.3	<0.3	<0.6	<0.6	---	ND
MW-3	12/4/97	<50	---	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	---
MW-3	3/13/98	<50	<5.0	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	95 -MTBE
MW-4	9/5/97	---	---	---	---	---	---	---	---	---	---
MW-4	12/4/97	---	---	---	---	---	---	---	---	---	---
MW-4	3/13/98	<50	<5.0	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	32 -MTBE

Notes:

All analyses are reported in micrograms per liter (ug/l).

TPH-G = total petroleum hydrocarbons as gasoline.

TPH-D = total petroleum hydrocarbons as diesel.

TOG = total oil and grease

VOCs = volatile organic compounds, reported as total concentration of all constituents.

SVOCs = semi-volatile organic compounds, reported as total concentration of all constituents.

MTBE = Methyl Tertiary Butyl Ether

--- = Not Analyzed

ND = Not Detected at a concentration presented on laboratory reports

F:\TRANSFER\PROJECT\CALTY097\7I022\H2O-LAB.XLS

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: TW-1
Sheet 1 **of** 1

Project Name and Location: Ethne St. Maintenance Station	**TC Number:** TC-0637-07
Elevation:	**Date and Time Started:** 2/8/96 0838
Date and Time Completed: 2/8/98 0905	
Completion Depth: 13'	**Number of Samples:** Drive: 1; 1-liter: 2; VOA: 3; Other: 1 plastic
Boring Diameter & Drilling Method: 2 3/8 drive casing	**Water Level:** First (date/time): 4.06' 8 0915 2/8/96; Second (date/time): 11.01 2/8/95 1045
Sampler: 1 3/8 Geo Core	**Hammer Wt.:** / **Drop:**
Boring Location:	
Drilling Co: Precision Sampling	**Driller:** Steward King / Steve Archer
Geologist: M. Wagoff	

Depth (ft.)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Gr	Sa	Si	Cl	P.I.D. Reading	Comments
0					asphalt over road base	A/C							
1–4		///	///		Dk brown-lt brown clayey, sandy silt, @ 3' lt gravel clasts, stiff, moist, No HC odor.	Fill	ML	20	25	40	15	0, 0, 0	0840
6–8	TW1-6.5	■	///		As above, but saturated. May have pushed down to Bay Mud. Black, at 7' grades to med green gray @ 10', silty clay, stiff, moist, no HC odor	? ? / Bay Mud	CL					0, 0	0850, 0858
10–11			///		As above, but more brown gray @ 12.5'.								0900
13					Terminated 0905 @ 13' due to adequate water. GW sample TW1-W1 collected @ 1015	//////							

ATTACHMENT 5

TETRA TECH, INC.
FIELD LOG OF BORING

Boring #: TW-2
Sheet 1 of 1

Project Name and Location: Ettie St. Monitoring Station		TC Number: 0637-03
Elevation:	Date and Time Started: 2/8/96 0915	Date and Time Completed: 2/8/96 0950
Completion Depth:	Number of Samples: Drive: (1) 1-liter: (2) VOA: (3)	Other: 2 plastic
Boring Diameter & Drilling Method: 2 3/8 drive casing	Water Level: First (date/time): ~~Before Sampling~~ 2/8/96 1030 ~~5.65~~ (3.77)	Second (date/time): 2/8/96 10:50 3.8'
Sampler: 1 1/2" cont. core	Hammer Wt.: Drop:	Boring Location:
Drilling Co: Precision Sampling	Driller: Stewart King / Jose Albarez	Geologist: M. Wyatt

Depth (ft)	Sample No.	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Gr	Sa	Si	Cl	P.I.D. Reading	Comments
0					asphalt over quarried gravel road base.								0920
1													
2													
3			/////		~~Gray~~ Mud green to v. dk brn (mottled) clayey, pebbly, silty fine sand, moist, no HC odor	Fill	SM					0, 0	0922
4													
5						— ? — ? —							0925
6			/////		~~[illegible]~~, As Above, but fines downward to clayey sandy silt, ~~[illegible]~~, moist, no HC odor	Bay Mud ?						0, 0, 0	
7													
8			/////		v. dk gray ~~[illegible]~~, clay silt, pebbles, grades to black, pebbly silty clay, lo plasticity, wet, no HC odor. GW between 9+9.5'		CH/CL					0, 0, 0, 0	0930
9	TW2-09												
10			No recovery		No recovery — will try a little deeper; pushing a piece of wood; do two more feet to get sample.								0935
11													
12													
13			/////		upper part v. dk gray pebbly silty clay, grades to brown pebbly silt @ 13.5', ~~[illegible]~~ fine to brown silty clay @ 14.5'.	- - - -	CH, ML, CH						0945
14													
15					Boring Terminated @ 15'	/////							
16	GW Sample TW2-W1 collected @ 1030												

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO:	MW-1
PERMIT NO:	97379

DATE: 7/29/97	PROJECT NAME: CALTRANS, Ettie Street	PROJECT NO: 575-7022

WELL SITE LOCATION PLAN:

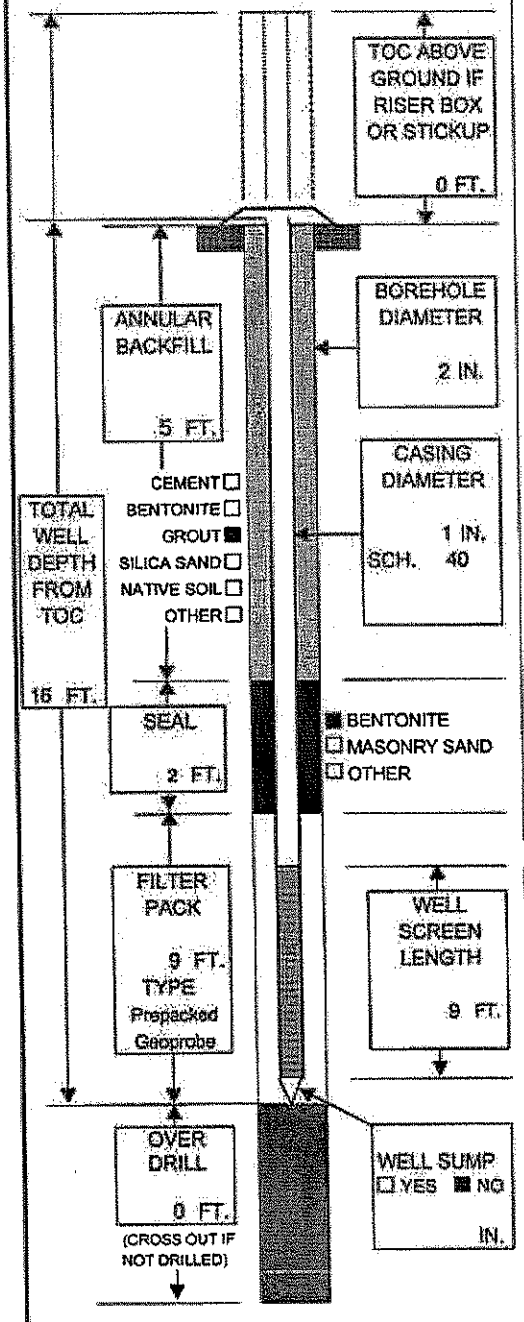
SEC: TWN: RGE: LAT: LONG:

DRILLING CO: Fisch Environmental

DRILL CREW: David Fisch

WELL TYPE: ■ SHALLOW ☐ SINGLE CASED ■ MONITORING
☐ PERMANENT ☐ INTERMEDIATE ☐ DOUBLE CASED ☐ RECOVERY
☐ TEMPORARY ☐ DEEP ☐ OTHER ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECON. ☐ STEAM CLEAN ■ HIGH PRESSURE WASH ■ SOAP WASH ☐ OTHER

CASING TYPE: ■ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ■ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED ☐ OTHER
PIT CASING: ☐ YES ■ NO ☐ DESCRIBE

WELL SCREEN: ■ PVC STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☐ 2" ☐ 4" ☐ 6" ■ OTHER 1 IN
SLOT: ■ 0.010 ☐ 0.020 ☐ OTHER IN

DRILLING METHOD: ☐ SOLID STEM ☐ HOLLOW STEM ☐ MUD ROTARY ☐ AIR ROTARY ■ DIRECT PUSH ☐ HAND AUGER ☐ OTHER
BIT SIZE: ■ 2" ☐ 4" ☐ 6" ☐ 8" ☐ 12" ☐ OTHER IN
DRILLING MUD: ■ NONE ☐ WATER ☐ BENTONITE ☐ OTHER
CENTRALIZER: ☐ YES ■ NO

COMPLETION: ■ FLUSH MOUNT ☐ STICKUP ☐ RISER BOX
LOCK TYPE: ☐ DOLPHIN ☐ MASTER KEY NO. ☐ OTHER
PAD: ☐ 2'X2' ☐ 4'X4' ☐ OTHER

CUTTINGS: ■ DRUMMED NUMBER OF DRUMS 0.25 ☐ SPREAD ☐ OTHER

DEVELOPMENT METHOD: ☐ NONE ■ BAILING ☐ PUMPING ☐ AIR LIFT ■ SURGE & BLOCK ☐ OTHER
TIME: ■ 10 MIN ☐ 20 MIN ☐ OTHER MIN
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER 1.5 GAL
WATER BEFORE: ☐ SILTY ■ TURBID ☐ OPAQUE ☐ CLEAR
WATER AFTER: ☐ SILTY ☐ TURBID ■ OPAQUE ☐ CLEAR
EVIDENT ODOR: ☐ YES ■ NO TYPE

DEVELOPMENT WATER: ■ DRUMMED NUMBER OF DRUMS ☐ SPREAD ☐ TREATED ☐ POTW ☐ OTHER

WATER LEVEL: INITIAL FT ☐ BTOC ☐ BGS

DATE: FT BELOW TOC

DATE: FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

Geoprobe pre-assembled filter pack and screen (9 feet)

PREPARED BY: John P. Neville

PSI
Rev. 12/95

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO: MW-2
PERMIT NO: 97379
PROJECT NO: 575-7I022

DATE: 7/29/97 | PROJECT NAME: CALTRANS, Ettie Street

WELL SITE LOCATION PLAN:

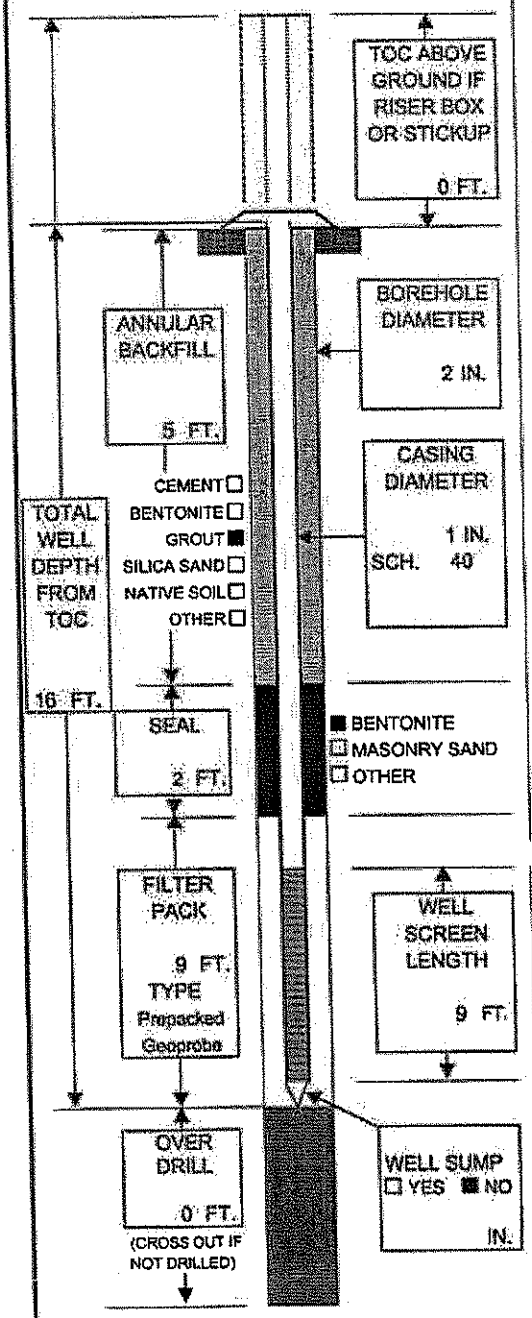
SEC: TWN: RGE: LAT: LONG:

DRILLING CO: Fisch Environmental

DRILL CREW: David Fisch

WELL TYPE: ■ SHALLOW ☐ SINGLE CASED ■ MONITORING
☐ PERMANENT ☐ INTERMEDIATE ☐ DOUBLE CASED ☐ RECOVERY
☐ TEMPORARY ☐ DEEP ☐ OTHER ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECON. ☐ STEAM CLEAN ■ HIGH PRESSURE WASH ■ SOAP WASH ☐ OTHER

CASING TYPE: ■ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ■ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED ☐ OTHER
PIT CASING: ☐ YES ■ NO ☐ DESCRIBE

WELL SCREEN: ■ PVC STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☐ 2" ☐ 4" ☐ 6" ■ OTHER 1 IN
SLOT: ■ 0.010 ☐ 0.020 ☐ OTHER IN

DRILLING METHOD: ☐ SOLID STEM ☐ HOLLOW STEM ☐ MUD ROTARY ☐ AIR ROTARY ■ DIRECT PUSH ☐ HAND AUGER ☐ OTHER
BIT SIZE: ■ 2" ☐ 4" ☐ 6" ☐ 8" ☐ 12" ☐ OTHER IN
DRILLING MUD: ■ NONE ☐ WATER ☐ BENTONITE ☐ OTHER
CENTRALIZER: ☐ YES ■ NO

COMPLETION: ■ FLUSH MOUNT ☐ STICKUP ☐ RISER BOX
LOCK TYPE: ☐ DOLPHIN ☐ MASTER KEY NO. ☐ OTHER
PAD: ☐ 2'X2' ☐ 4'X4' ☐ OTHER

CUTTINGS: ■ DRUMMED NUMBER OF DRUMS 0.25 ☐ SPREAD ☐ OTHER

DEVELOPMENT METHOD: ☐ NONE ■ BAILING ☐ PUMPING ☐ AIR LIFT ■ SURGE & BLOCK ☐ OTHER
TIME: ■ 10 MIN ☐ 20 MIN ☐ OTHER MIN
AMOUNT ☐ 5 GAL ☐ 10 GAL ☐ OTHER 1.5 GAL
WATER BEFORE: ☐ SILTY ■ TURBID ☐ OPAQUE ☐ CLEAR
WATER AFTER: ☐ SILTY ☐ TURBID ■ OPAQUE ☐ CLEAR
EVIDENT ODOR: ☐ YES ■ NO TYPE

DEVELOPMENT WATER: ■ DRUMMED NUMBER OF DRUMS ☐ SPREAD ☐ TREATED ☐ POTW ☐ OTHER

WATER LEVEL: INITIAL FT ☐ BTOC ☐ BGS
DATE: FT BELOW TOC
DATE: FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

Geoprobe pre-assembled filter pack and screen (9 feet)

PREPARED BY: John P. Neville

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO: MW-3
PERMIT NO: 97379

DATE: 7/29/97 | PROJECT NAME: CALTRANS, Ettie Street | PROJECT NO: 575-71022

WELL SITE LOCATION PLAN:

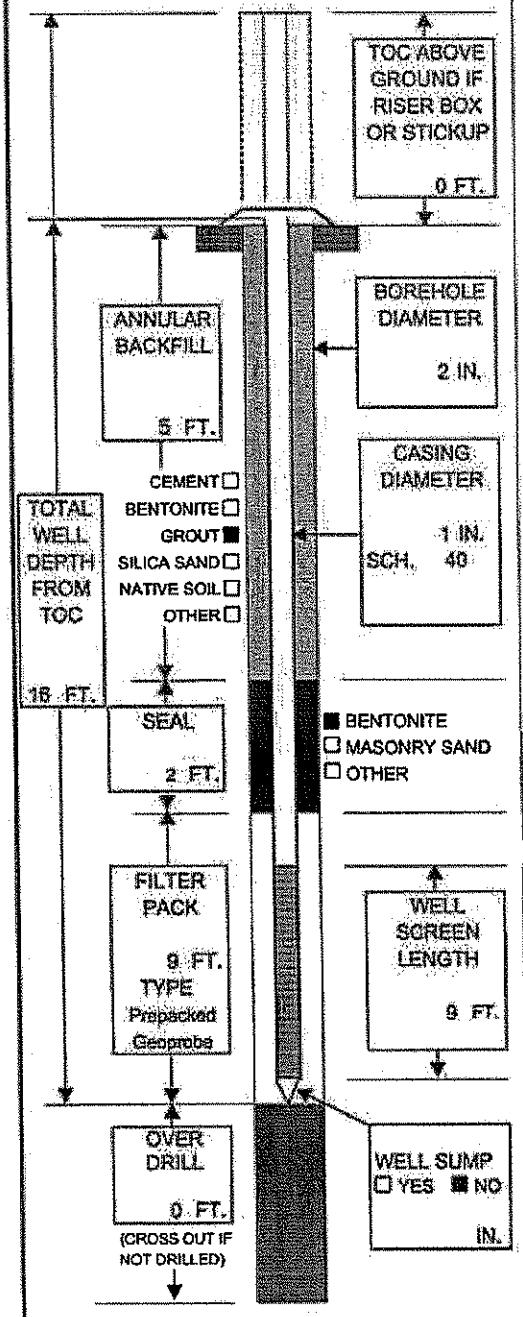
SEC: TWN: RGE: LAT: LONG:

DRILLING CO: Fisch Environmental

DRILL CREW: David Fisch

WELL TYPE: ■ SHALLOW ☐ SINGLE CASED ■ MONITORING
☐ PERMANENT ☐ INTERMEDIATE ☐ DOUBLE CASED ☐ RECOVERY
☐ TEMPORARY ☐ DEEP ☐ OTHER ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECON. ☐ STEAM CLEAN ■ HIGH PRESSURE WASH ■ SOAP WASH ☐ OTHER

CASING TYPE: ■ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ■ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED ☐ OTHER
PIT CASING: ☐ YES ■ NO ☐ DESCRIBE

WELL SCREEN: ■ PVC STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☐ 2" ☐ 4" ☐ 6" ■ OTHER 1 IN
SLOT: ■ 0.010 ☐ 0.020 ☐ OTHER IN

DRILLING METHOD: ☐ SOLID STEM ☐ HOLLOW STEM ☐ MUD ROTARY ☐ AIR ROTARY ■ DIRECT PUSH ☐ HAND AUGER ☐ OTHER
BIT SIZE: ■ 2" ☐ 4" ☐ 6" ☐ 8" ☐ 12" ☐ OTHER IN
DRILLING MUD: ■ NONE ☐ WATER ☐ BENTONITE ☐ OTHER
CENTRALIZER: ☐ YES ■ NO

COMPLETION: ■ FLUSH MOUNT ☐ STICKUP ☐ RISER BOX
LOCK TYPE: ☐ DOLPHIN ☐ MASTER KEY NO. ☐ OTHER
PAD: ☐ 2'X2' ☐ 4'X4' ☐ OTHER

CUTTINGS: ■ DRUMMED NUMBER OF DRUMS 0.25 ☐ SPREAD ☐ OTHER

DEVELOPMENT METHOD: ☐ NONE ■ BAILING ☐ PUMPING ☐ AIR LIFT ■ SURGE & BLOCK ☐ OTHER
TIME: ■ 10 MIN ☐ 20 MIN ☐ OTHER MIN
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER 1.5 GAL
WATER BEFORE: ☐ SILTY ■ TURBID ☐ OPAQUE ☐ CLEAR
WATER AFTER: ☐ SILTY ☐ TURBID ■ OPAQUE ☐ CLEAR
EVIDENT ODOR: ☐ YES ■ NO TYPE

DEVELOPMENT WATER: ■ DRUMMED NUMBER OF DRUMS ☐ SPREAD ☐ TREATED ☐ POTW ☐ OTHER

WATER LEVEL: INITIAL FT ☐ BTOC ☐ BGS

DATE: FT BELOW TOC

DATE: FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

Geoprobe pre-assembled filter pack and screen (9 feet)

PREPARED BY: John P. Neville

MONITORING WELL CONSTRUCTION DATA

WELL/BORING NO: MW-4
PERMIT NO: 97379
PROJECT NO: 575-7022

DATE: 7/29/97 | PROJECT NAME: CALTRANS, Ettie Street

WELL SITE LOCATION PLAN:

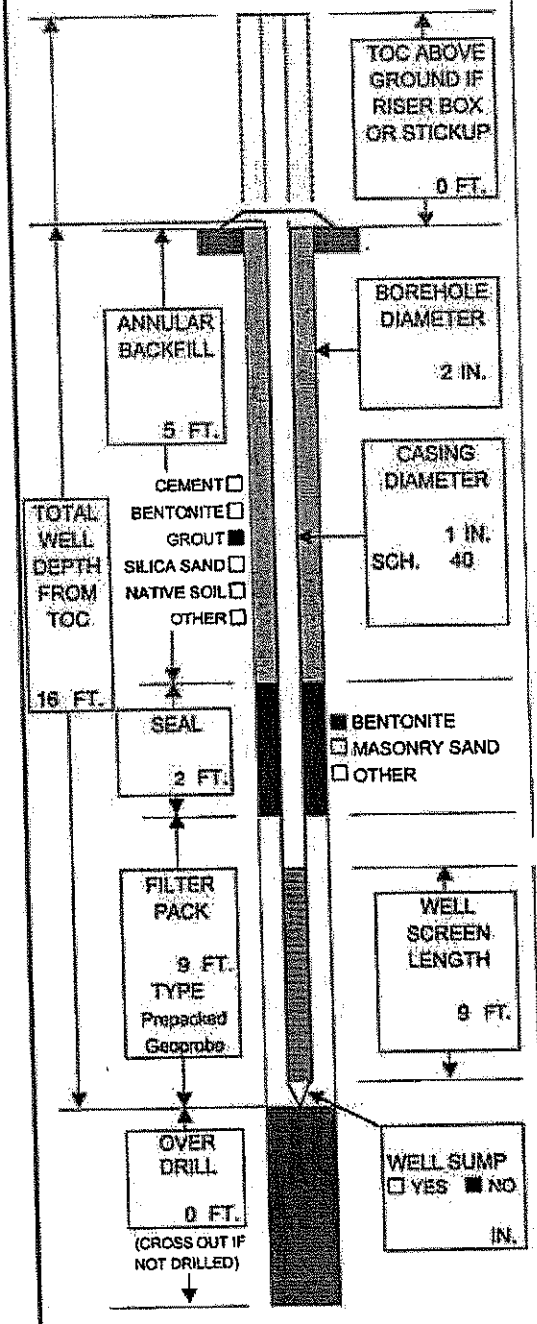
SEC: TWN: RGE: LAT: LONG:

DRILLING CO: Fisch Environmental

DRILL CREW: David Fisch

WELL TYPE: ■ SHALLOW ☐ SINGLE CASED ■ MONITORING
☐ PERMANENT ☐ INTERMEDIATE ☐ DOUBLE CASED ☐ RECOVERY
☐ TEMPORARY ☐ DEEP ☐ OTHER ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECON. ☐ STEAM CLEAN ■ HIGH PRESSURE WASH ■ SOAP WASH ☐ OTHER

CASING TYPE: ■ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ■ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED ☐ OTHER
PIT CASING: ☐ YES ■ NO ☐ DESCRIBE

WELL SCREEN: ■ PVC STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☐ 2" ☐ 4" ☐ 6" ■ OTHER 1 IN
SLOT: ■ 0.010 ☐ 0.020 ☐ OTHER IN

DRILLING METHOD: ☐ SOLID STEM ☐ HOLLOW STEM ☐ MUD ROTARY ☐ AIR ROTARY ■ DIRECT PUSH ☐ HAND AUGER ☐ OTHER
BIT SIZE: ■ 2" ☐ 4" ☐ 6" ☐ 8" ☐ 12" ☐ OTHER IN
DRILLING MUD: ■ NONE ☐ WATER ☐ BENTONITE ☐ OTHER
CENTRALIZER: ☐ YES ■ NO

COMPLETION: ■ FLUSH MOUNT ☐ STICKUP ☐ RISER BOX
LOCK TYPE: ☐ DOLPHIN ☐ MASTER KEY NO. ☐ OTHER
PAD: ☐ 2'X2' ☐ 4'X4' ☐ OTHER

CUTTINGS: ■ DRUMMED NUMBER OF DRUMS 0.25 ☐ SPREAD ☐ OTHER

DEVELOPMENT METHOD: ☐ NONE ■ BAILING ☐ PUMPING ☐ AIR LIFT ■ SURGE & BLOCK ☐ OTHER
TIME: ■ 10 MIN ☐ 20 MIN ☐ OTHER MIN
AMOUNT ☐ 5 GAL ☐ 10 GAL ☐ OTHER 1.5 GAL
WATER BEFORE: ☐ SILTY ■ TURBID ☐ OPAQUE ☐ CLEAR
WATER AFTER: ☐ SILTY ☐ TURBID ■ OPAQUE ☐ CLEAR
EVIDENT ODOR: ☐ YES ■ NO TYPE

DEVELOPMENT WATER: ■ DRUMMED NUMBER OF DRUMS ☐ SPREAD ☐ TREATED ☐ POTW ☐ OTHER

WATER LEVEL: INITIAL FT ☐ BTOC ☐ BGS
DATE: FT BELOW TOC
DATE: FT BELOW TOC

NOTES: (DESCRIBE ALL NON-STANDARD METHODS & MATERIALS)

Geoprobe pre-assembled filter pack and screen (9 feet)

PREPARED BY: John P. Neville