



ENVIRONMENTAL HEALTH SERVICES

1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9335 (FAX)

REMEDIAL ACTION COMPLETION CERTIFICATION

**StID 3996- 7700 Greenly Dr, Oakland, CA
(1-500 gallon diesel tank removed in July 16, 1994)**

June 17, 1998

Ms. Cynthia Adkisson
EBMUD
P.O. Box 24055
Oakland, CA 94623-0455

Dear Ms. Adkisson:

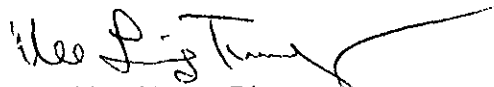
This letter confirms the completion of site investigation and remedial action for the underground storage tank formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank 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, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, Section 2721(e) of the California Code of Regulations.

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

Sincerely,


Mee Ling Tung, Director

cc: Richard Pantages, Chief of Division of Environmental Protection
Chuck Headlee, RWQCB
Dave Deaner, SWRCB
Leroy Griffin, OFD
files-ec (ebmud-3)

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



R01128

StID 3996

June 17, 1998

Ms. Cynthia Adkisson
EBMUD
P.O. Box 24055
Oakland, CA 94623-0455

ENVIRONMENTAL HEALTH SERVICES
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9335 (FAX)

**Re: Fuel Leak Site Case Closure for EBMUD Upper San Leandro Filter Plant, at 7700
Greenly Drive, Oakland, CA**

Dear Ms. Adkisson:

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 Protection Division 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:

- o up to 600 ppm TPH as diesel and 2.3 ppb benzene exists in soil and groundwater, respectively, beneath the site; and,
- o a site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.

If you have any questions, please contact me at (510) 567-6762.

eva chu
Hazardous Materials Specialist

enclosure:

1. Case Closure Letter
2. Case Closure Summary

c: Frank Kliewer, City of Oakland-Planning, 1330 Broadway, 2nd Fl, Oakland, CA 94612
files (ebmud-4)

R.C.S.R.# 01-2232

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

CALIFORNIA REGIONAL WATER
 APR 20 1998
 QUALITY CONTROL BOARD

I. AGENCY INFORMATION

Date: March 25, 1998

Agency name: **Alameda County-HazMat** Address: **1131 Harbor Bay Pkwy**
 City/State/Zip: **Alameda, CA 94502** Phone: **(510) 567-6700**
 Responsible staff person: **Eva Chu** Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **EBMUD San Leandro Filter Plant**
 Site facility address: **7700 Greenly Dr, Oakland, CA**
 RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **3996**
 URF filing date: **8/25/94** SWEEPS No: **N/A**

<u>Responsible Parties:</u>	<u>Addresses:</u>	<u>Phone Numbers:</u>
EBMUD	P.O. Box 24055	510/835-3000
Cynthia Adkisson	Oakland, CA 94623-0455	

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	500	Diesel	Removed	7/16/94

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Overfill (faulty solenoid valve in the piping connecting the AGT to UST)**
 Site characterization complete? **YES**
 Date approved by oversight agency: **3/17/98**
 Monitoring Wells installed? **Yes** Number: **3**
 Proper screened interval? **Yes, 10 to 25' bgs**
 Highest GW depth below ground surface: **6.1** Lowest depth: **11.2 in MW-3**
 Flow direction: **SE**
 Most sensitive current use: **Water treatment plant**
 Are drinking water wells affected? **No** Aquifer name: **Unknown**
 Is surface water affected? **No** Nearest affected SW name: **NA**
 Off-site beneficial use impacts (addresses/locations): **NA**
 Report(s) on file? **YES** Where is report(s) filed? **Alameda County**
 1131 Harbor Bay Pkwy
 Alameda, CA 94502

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal w/destination)</u>	<u>Date</u>
Tank & Piping	1 UST	Recertified and reused at another facility	
Soil	44 tons	Thermal treat at Port Costa Mat'ls	11/22/94
Groundwater/ Free Product	2,000 gal.	Recycled at Gibson Oil, Redwood City	9/21/94

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before ¹	After ²	Before ³	After ⁴
TPH (Gas)				
TPH (Diesel)	16,000	600	100,000	230
Benzene	0.13	<.005	6.3	2.3
Toluene	2.0	0.055	38	<.2
Ethylbenzene	1.0	0.14	8.8	8.7
Xylenes	17	1.3	130	28

Other

- NOTE: 1 initial excavation samples, 7/94
 2 overexcavation samples, 9/94
 3 grab water sample from tank excavation, 7/94
 4 results from well MW-3 (TPHd from 11/97, BTEX from 6/96)

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? _____

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? _____

Does corrective action protect public health for current land use? **YES**

Site management requirements: **A site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.**

Should corrective action be reviewed if land use changes? **YES**

Monitoring wells Decommissioned: **No, pending site closure**

Number Decommissioned: **0** Number Retained: **3**

List enforcement actions taken: **NA**

List enforcement actions rescinded: **NA**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Eva Chu**

Title: **Haz Mat Specialist**


Signature: 

Date: **4/17/98**

Reviewed by

Name: **Madhulla Logan**

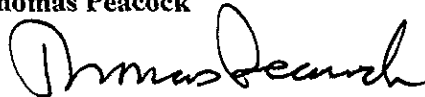
Title: **Haz Mat Specialist**

Signature: 

Date: **3/27/98**

Name: **Thomas Peacock**

Title: **Supervisor**

Signature: 

Date: **4-16-98**

VI. RWQCB NOTIFICATION

Date Submitted to RB: **4/18/98**

RB Response:

RWQCB Staff Name: **Chuck Headlee**

Title: **AEG**

Signature: 

Date: **4/22/98**

VII. ADDITIONAL COMMENTS, DATA, ETC.

On July 4, 1994 the emergency generator was in use. When the generator was shut down, the flow control valve did not close properly, causing fuel from the AGT to siphon into the UST. The UST overfilled resulting in a product release to the subsurface.

The 500 gallon doubled-walled fiberglass UST was removed in July 24, 1994 and subsequently recertified for reuse at another site. During excavation activities around the UST the surrounding soil was observed to be saturated with diesel fuel. As diesel fuel drained from the soil it was pumped into drums for later disposal. After the tank was removed two soil samples (USL51, USL52) and one grab water sample (USL50) were collected. The water sample contained 100,000 ppb TPHd, and the soil samples contained up to 16,000 ppm TPHd. (See Fig 1, 2, and Table 1)

In September 1994 the UST piping was removed. In addition, the tank pit was overexcavated, but was limited by the foundation of the storage shed on the west and by a live 10" water line on the east. Four confirmatory soil samples (USL91 through USL94) were collected from the sidewalls. A maximum of 600 ppm TPHd and 0.13, 2.0, 1.0, and 17ppm BTEX, respectively, were detected. (See Table 1)

In August 1995 three groundwater monitoring wells (MW-1 through MW-3) were installed in the vicinity of the former tank excavation. Groundwater was encountered at depths ranging from 15' to 19.5' bgs. After seven quarters of samplings, the furthest downgradient well, MW-3, continues to identify TPHd (see Fig 3, Table 2). However, the TPHd levels have shown a steady decline. A risk assessment was completed which included analysis of risk due to BTEX and PNA compounds. No added risk was calculated due to residual contamination.

Finally, to verify that the plume was stable and not migrating, several direct push borings (C1, C2, C3 and C5) were completed to ~30' bgs. Most of the borings encountered stiff clay sediments to 20+' bgs, with the exception of boring C3. Only boring C3 encountered groundwater. Groundwater from C3 was analyzed for TPHd. C3 did not identify TPHd above the detection limit of 50 ppb (see Fig 4, Table 2). It appears that the hydrocarbon plume is stable and/or shrinking. Continued monitoring is not warranted.

In summary, case closure is recommended because:

- o the leak and ongoing sources have been removed;
- o the site has been adequately characterized;
- o the dissolved plume is not migrating;
- o no water wells, surface water, or other sensitive receptors are likely to be impacted; and,
- o the site presents no significant risk to human health or the environment.

TABLE 1

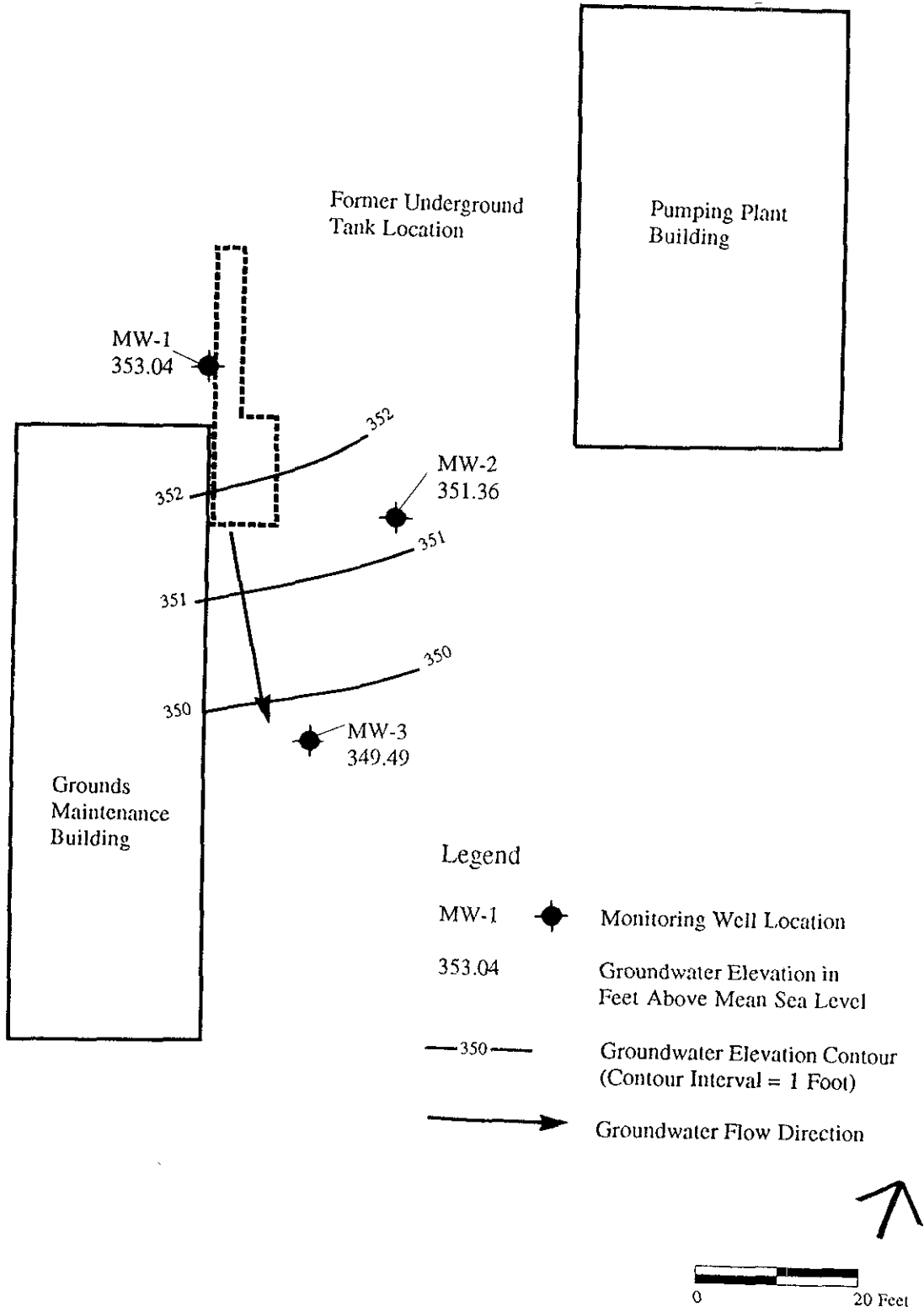
SUMMARY OF ANALYTICAL RESULTS
EBMUD Upper San Leandro Filter Plant
7700 Greenly Drive, Oakland
 (mg/kg unless otherwise noted)

Sample Location	Sample Date	TPH as Diesel ¹	Benzene ²	Toluene ²	Ethylbenzene ²	Xylenes ²
Excavation Samples						
USL51 (South Wall)	7/25/94	14	<0.005	<0.005	<0.005	<0.005
USL52 (North Wall)	7/25/94	16,000	0.13	2.0	1.0	17
USL91 (Northeast Wall)	9/12/94	600	<0.005	0.055	0.14	1.3
USL92 (Southeast Wall)	9/12/94	120	<0.005	<0.005	<0.005	<0.005
USL93 (South Wall)	9/12/94	45	<0.005	<0.005	<0.005	0.015
USL94 (Northwest Wall)	9/12/94	160	<0.005	<0.005	<0.005	0.018
Soil Stockpile						
Comp1	9/12/94	9,900	<0.005	<0.005	0.023	0.16
Groundwater Seepage Sample (mg/L)						
USL50 (Tank Pit)	7/25/94	100	0.0063	0.038	0.0088	0.13

Notes: TPH = Total Petroleum Hydrocarbons.
 <x.x = Compound not identified above reporting limit.
 Samples collected by Cottle Engineering
 Sample depths not documented.

¹ Test Method - GCFID/3550.

² Test Method = EPA 8020.



**EBMUD - Upper San Leandro Filter Plant
Oakland, California**

TABLE 02

SUMMARY OF ANALYTICAL RESULTS, GROUNDWATER
EBMUD Upper San Leandro Filter Plant
7700 Greenly Drive, Oakland, California
 (mg/L)

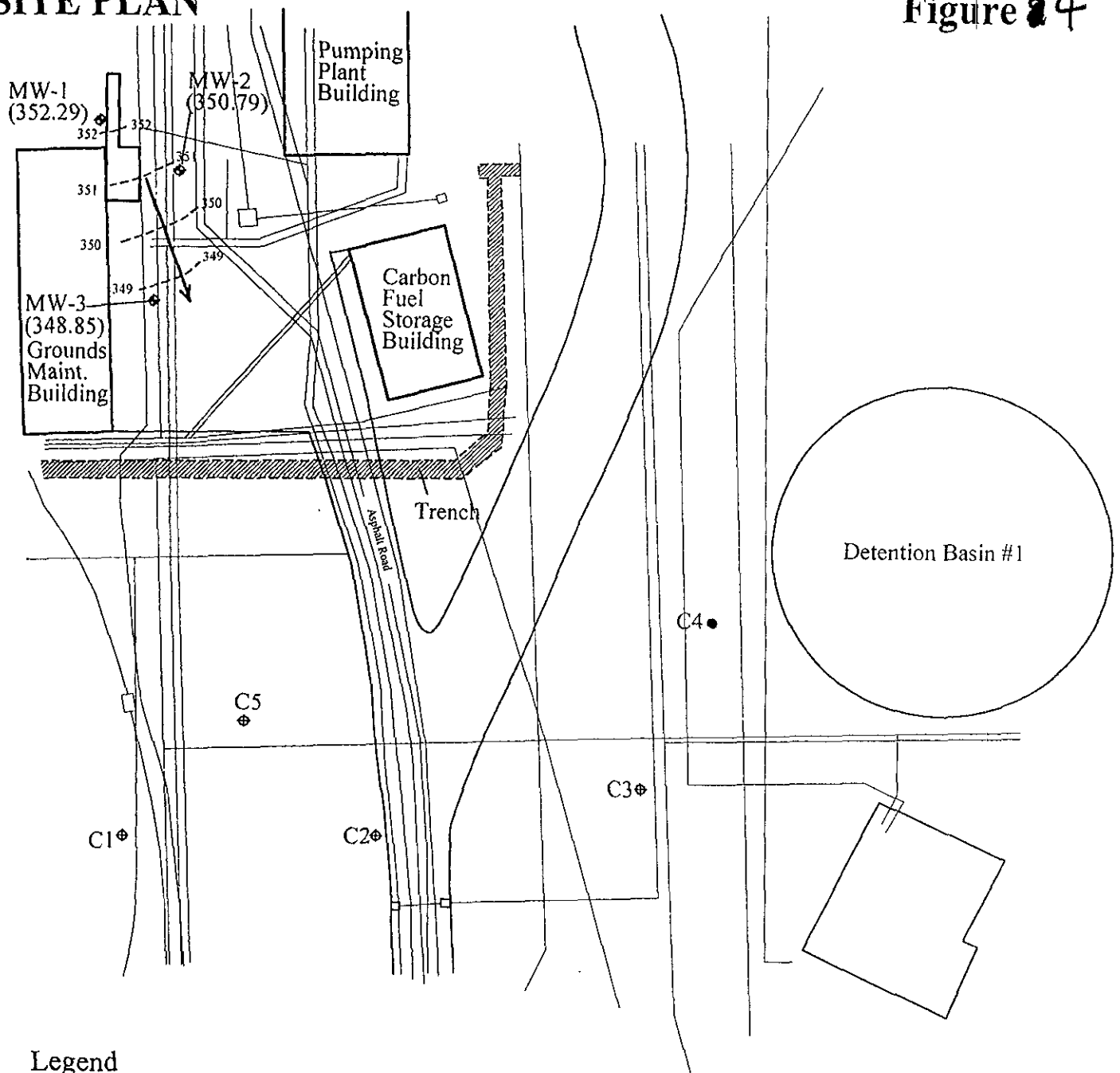
Sample ID	Date	TPH as Diesel ¹	Benzene ²	Toluene ²	Ethyl-benzene ²	Xylenes ²
<u>Monitoring Wells</u>						
MW-1	08/31/95	-- ³	<0.0002	<0.0002	<0.0002	<0.0002
	11/16/95	0.081	0.0003⁵	<0.0002	<0.0002	0.0003^{5,6}
	02/29/96	0.38	<0.0002	<0.0002	<0.0002	<0.0002
	06/04/96	<0.049	<0.0002	<0.0002	<0.0002	<0.0002
MW-2	08/31/95	<0.05	<0.0002	<0.0002	<0.0002	<0.0002
	11/16/95	<0.05	<0.0002	<0.0002	<0.0002	<0.0002
	02/29/96	0.13	<0.0002	<0.0002	<0.0002	<0.0002
	06/04/96	<0.049	<0.0002	<0.0002	<0.0002	<0.0002
MW-3	08/31/95	<0.05	<0.0002	<0.0002	<0.0002	<0.0002
	11/16/95	43	0.001	0.0002^{5,6}	<0.0002	0.0042⁶
	02/29/96	190	0.0003⁵	<0.0002	0.0008	0.010
	06/04/96	32	0.0022	<0.0002	0.0087	0.028
	04/04/97 ⁸	2⁹	--	--	--	--
	07/01/97	0.27⁹	--	--	--	--
Travel Blank	11/10/97	0.23⁹	--	--	--	--
	08/31/95	--	<0.0002	<0.0002	<0.0002	<0.0002
	11/16/95	--	<0.0002	<0.0002	<0.0002	<0.0002
	05/10/96 ⁷	--	<0.0002	<0.0002	<0.0002	<0.0002
<u>Hydropunch (Grab Groundwater Sample)</u>						
C3	01/07/98	<0.05 ⁹	--	--	--	--
<u>Tank Excavation</u>						
USL50 ⁴	7/25/94	100	0.0063	0.038	0.0088	0.13
MCL ¹⁰		--	0.001	0.15	0.7	1.75

Notes: TPH = Total Petroleum Hydrocarbons.
 -- = Compound not analyzed.
 <x.x = Compound not detected above reporting limit.
 xx = Bolded numbers indicate compounds identified above the level of detection.
 Monitoring well locations are shown on Figure 2.
 Laboratory report for the 1 July 1997 sampling event is included in Attachment B.

¹ Test Method = California LUFT method 3510/8015M or 3520/8015M.
² Test Method = EPA 8020.
³ Sample bottle broken in laboratory; compound not analyzed.
⁴ Sample collected by Cottle Engineering.
⁵ Laboratory reported concentration outside calibration range.
⁶ Laboratory reported compound also detected in laboratory blank sample.
⁷ Travel blank was prepared by the EBMUD laboratory on 10 May 1996; this travel blank was obtained by BASELINE staff one day prior to sampling and submitted with samples collected on 4 June 1996 for analysis. Air bubbles were observed by the lab in the travel blank.
⁸ The sample was also analyzed for polynuclear aromatic hydrocarbons (PNAs) (EPA Method 8270). All PNAs were reported below the laboratory reporting limit of 0.01 mg/L.
⁹ Sample was subjected to silica gel clean up prior to analysis for diesel (EPA Method 3630).
¹⁰ The Maximum Contaminant Limit (MCL) is from Title 22, Code of California Regulations, Section 64444.

SITE PLAN

Figure 24



Legend

MW-1 ♦ Monitoring Well Location
(352.29) (Groundwater elevation in ft. above mean sea level, 10 November 1997)

C3 ♦ Hydropunch Locations

---351--- Groundwater Elevation Contour
(contour interval, 1 foot)

• Hydropunch Location (not attempted)

→ Groundwater Flow Direction
(November 1997)

— Underground Utility Line

□ Former Underground Storage Tank Location

**EBMUD-Upper
San Leandro Filter Plant
Oakland, California**



BASELINE

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-1
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 361.12 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt cover	HNu = 0 ppm in breathing zone 4-7-10 (blow count) HNu = 0 ppm in breathing zone HNu = 0 ppm in sample Gastech = 0% LEL in hole
1	GW	Greenish-gray GRAVEL, 1/3-1-inch clasts, medium dense, (fill).	
2	CH	Light brown, silty CLAY with trace of gravel and sand, 1/3-1/2-inch subangular to sub-rounded clasts, high plasticity, firm-stiff, caliche nodules, very moist.	
3			
4		Becoming pale brown.	
5		Increase in size and percentage of gravel.	
6			
7			
8			
9			
10			

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA	Boring no.	MW-1
Driller	Clear Heart Drilling	Project no.	95350
Method	Hollow-stem auger	Date	8-22-95
Logger	WKS	Datu	361.12 feet msl
		Bore size	8 3/4"
		Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
10	CH	Same as above.	3-7-8
11			
12	SC	Reddish-brown, clayey SAND with gravel, fine- to very fine-grained, 1/3-3/4-inch angular to sub-angular clasts, high plasticity, medium-dense, becoming loose at 15 feet, very moist.	3-4-21
13			
14			
15			
16			
17		Drilling easier at 15 feet; possible water.	
18			
19			
20	GC	Brown, clayey GRAVEL with sand, 1/3-1" sub-angular to angular clasts, high plasticity, wet.	

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-1
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 361.12 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
20	GC	Brown, clayey GRAVEL with sand, 1/3-1" subangular to angular clasts, high plasticity, wet.	4-6-5 HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole
21	ML	Brown, clayey SILT, moderate to high plasticity, soft, wet.	
22	GC/CL	Brown, clayey GRAVEL/gravelly CLAY, 1/3-3/4 sub-angular to angular clasts, high plasticity, loose-soft, wet.	HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole 3-10-20 Becoming hard
23	CL	Brown, silty CLAY, high to moderate plasticity, very stiff, moist.	
24			
25		Total depth = 25.0 feet.	
26			
27			
28			
29			
30			

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-2
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 360.40 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt cover	HNu = 0 ppm in breathing zone HNu = 0 ppm in hole Gastech = 0% LEL
1	GW	Brown to greenish-gray GRAVEL with sand, 1/3-3/4-inch subangular to angular clasts, moist (fill).	
2		Brown, silty CLAY with gravel, 1/3-1/2-inch subrounded clasts, high plasticity, soft-firm, very moist.	HNu = 0 ppm in breathing zone HNu = 0 ppm in hole Gastech = 0% LEL 4-6-7 (blow count)
3	CH		
4		Color changing to pale brown, black iron oxide-stained fractures, caliche nodules.	HNu = 0 ppm in breathing zone HNu = 0 ppm in hole Gastech = 0% LEL 4-6-7 (blow count)
5			
6		Becoming reddish-brown at 9.5 feet.	HNu = 0 ppm in breathing zone HNu = 0 ppm in hole Gastech = 0% LEL 4-6-7 (blow count)
7			
8		Becoming reddish-brown at 9.5 feet.	HNu = 0 ppm in breathing zone HNu = 0 ppm in hole Gastech = 0% LEL 4-6-7 (blow count)
9			
10		Becoming reddish-brown at 9.5 feet.	HNu = 0 ppm in breathing zone HNu = 0 ppm in hole Gastech = 0% LEL 4-6-7 (blow count)

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-2
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 360.40 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
10	CH	Same as above.	3-6-9 HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole
11			
12			
13			
14	MH-CH	Brown, clayey, SILT/silty CLAY with gravel and sand, high plasticity, stiff, moist. ✓	
15	CH/GC	Brown gravelly CLAY/clayey GRAVEL with sand, 1/3-1 1/2-inch subangular to subrounded clasts, high plasticity, medium dense-soft, very wet.	HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole 6-9-13 6-17-18-18 8-10-10 HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole
16			
17			
18			
19			
20			

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-2
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 360.40 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
20	CH/GC	Brown, gravelly CLAY/clayey GRAVEL with sand, 1/3-1 1/2-inch subangular to subrounded clasts, high plasticity, medium dense-soft, very wet.	
21			
22			
23			
24	GC	Brown GRAVEL with sand and clay, fine- to medium-grained sand, 1/3-3/4-inch subangular clasts, loose, wet	HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole
25	CH	Brown, silty CLAY, high plasticity, stiff, very wet.	4-7
26			
27		Total depth = 26.0 feet.	
28			
29			
30			

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-3
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 360.49 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt cover	
1	GW	Greenish-gray GRAVEL, with sand, 1/3-3/4-inch sub angular clasts, medium moist (fill). Brown GRAVEL with sand, fine- to coarse-grained, 1/3-2-inch rounded clasts, moist-very moist (fill).	HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole
2	GW		
3			
4			
5	CH	Pale brown, silty CLAY with gravel, 1/3-1/2-inch subrounded clasts, high plasticity, abundant caliche nodules, moist to very moist.	HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole 3-5-7 (blow count)
6			
7			
8			
9			
10			

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-3
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 360.49 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
10		Increase in gravel content and size.	5-12-12 HNu = 0 ppm in breathing zone HNu = 60 ppm in sample Gastech = 0% LEL in hole
11			
12			
13			
14			
15		Brown to reddish-brown, clayey GRAVEL/gravelly CLAY, 1/2-1 1/2-inch subangular clasts, high plasticity, very stiff-medium dense, wet.	HNu = 0 ppm in breathing zone HNu = 1 ppm in sample Gastech = 0% LEL in hole 6-11-17 Tip of drill bit wet at 15.5 ft.
16			
17			
18		Brown GRAVEL with sand and clay, 1/3-1-inch angular to subrounded clasts, medium-dense, wet.	
19			
20			

DRILLING LOG

Location	EBMUD Upper San Leandro Filter Plant, 2200 Greenly Drive, Oakland, CA		Boring no.	MW-3
Driller	Clear Heart Drilling		Project no.	95350
Method	Hollow-stem auger		Date	8-22-95
Logger	WKS	Datu 360.49 feet msl	Bore size	8 3/4"
			Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
20		Interbedding of silty sand layers, 1-4 inches thick.	5-10-15 HNu = 0 ppm in breathing zone Gastech = 0% LEL in hole
21			
22			
23		Reddish-brown, sandy CLAY with gravel, high plasticity, fine-grained, stiff, wet.	
24			
25			
26		Total depth = 25.0 feet.	
27			
28			
29			
30			

DRILLING LOG

Location	EBMUD San Leandro	Boring no.	C3
Driller	Precision Sampling Inc.	Project no.	95350-00
Method	DPT (Direct Push Technology)	Date	01/07/98
Logger	WKS	Datum	--
		Bore size	3 inches
		Casing size	N/A

Depth (ft.)	Graphic	Lithology	Notes
0		Mulch wood chips to 1.5 feet.	PID: 0 ppm breathing zone throughout drilling
1			
2	CL/GC	Brown, gravelley clay - clayey gravel, 1/3 to 1/4 sub-angular clasts, clasts of chert, rhyolite, firm, very moist.	Previously hand augered to 5 feet
3			
4			Used 3-foot long Butyrate tubes. Poor recovery 5-7
5			
6			Soft at 6.0 feet
7			
8			
9	CH	Dark gray, silty CLAY, trace of gravel, 1/3 to 1/2 sub-angular clasts, rootlets, high plasticity, very moist.	
10			

DRILLING LOG

Location	EBMUD San Leandro	Boring no.	C3
Driller	Precision Sampling Inc.	Project no.	95350-00
Method	DPT (Direct Push Technology)	Date	01/07/98
Logger	WKS	Datum	--
		Bore size	3 inches
		Casing size	N/A

Depth (ft.)	Graphic	Lithology	Notes
10			
11	CH	Becoming light brown in color at 12 feet bgs.	Good recovery
12			
13	GC	Pale brown, clayey GRAVEL, 1/3 to 1/2 inch angular to sub-angular clasts, medium dense, wet.	
14	GW	GRAVEL with some sand, clean, 1/2 - 2/3 sub-rounded to sub-angular clasts, coarse grained sand, loose, saturated.	Set hydropunch between 14-16 ft. Collected groundwater sample "C3- water".
15			
16	GC	Pale brown, clayey GRAVEL, 1/3 to 1/2 inch angular to sub-angular clasts, medium dense, wet.	
		Total depth = 16.0 feet	