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SECOR
International Incorporated

February 5, 1997

4008

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

SUMMARY REPORT FOR ADDITIONAL SITE CHARACTERIZATION, 580 JULIE ANN WAY, OAKLAND, CALIFORNIA, St ID #4008, FOR METZ BAKING COMPANY

Dear Mr. Chan:

SECOR International Incorporated (*SECOR*) is pleased to submit this Summary Report presenting the procedures and results of additional Site characterization conducted at 580 Julie Ann Way in Oakland, California (the Site, see Figure 1, Site Location Map). *SECOR* is submitting this document on behalf of the Metz Baking Company (Metz) which operates the Site as a San Francisco French Bread Company (SFFBC) baking and distribution facility. The scope of work performed was in general accordance with *SECOR*'s Work Plan dated July 24, 1996, as conditionally approved by the Alameda County Department of Environmental Health (ACDEH) in a July 26, 1996 letter.

SITE BACKGROUND

The Site is located in a mixed commercial/industrial area and consists of a large warehouse/bakery and an open asphalt parking/work area (Figure 2). The Site is used by the SFFBC to prepare and distribute baked food products. The Site formerly operated one 8,000-gallon capacity gasoline underground storage tank (UST) and one 10,000-gallon capacity diesel UST. Previous subsurface investigations conducted by Groundwater Technology, Inc. (GTI) in June 1991 and *SECOR* in November 1993 indicated the presence of total petroleum hydrocarbons as gasoline (TPHg) and TPH as diesel (TPHd) in soil samples collected in the immediate vicinity of the USTs. At soil boring locations further away from the USTs, low to non-detectable concentrations of TPHg and TPHd were reported; however, elevated concentrations of high-boiling point hydrocarbons (total oil and grease/total recoverable petroleum hydrocarbons) were reported at all boring locations where analyzed.

SECOR supervised the excavation and removal of the two USTs in September 1995. Petroleum hydrocarbon-impacted soil and groundwater were observed during UST removal activities, laboratory analysis of collected soil and groundwater samples revealed the presence of TPHg, TPHd, and high-boiling hydrocarbons. Based on the apparent composition of these high-boiling point hydrocarbons and their pervasive presence in fill soil underlying the Site, it was determined that the source of these hydrocarbons is not related to the USTs. *SECOR* supervised the installation of a groundwater monitoring well (MW-1) adjacent to the former USTs in February 1996, soil and groundwater samples collected and analyzed during these activities revealed the presence of TPHg, TPH as motor oil (TPHmo), and benzene, toluene, ethylbenzene, and xylenes (BTEX).

PRELIMINARY FIELD ACTIVITIES

Prior to initiation of field activities, *SECOR* modified the existing Site-specific Health and Safety Plan (HASP) to address the proposed scope of work and obtained well construction permits from the Alameda

County Flood Control and Water Conservation District (Zone 7). The proposed well locations were cleared with respect to underground utilities and other obstructions by California Utility Surveys (CUS) and Underground Service Alert (USA) was notified 48-hours in advance of field activities.

FIELD ACTIVITIES

Drilling and Soil Sampling

Four boreholes (MW-2, MW-3, MW-4 and SB-1) were advanced on August 14, 1996 by Bayland Drilling, Inc. of Menlo Park, California under the direction of a *SECOR* geologist utilizing a truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers (Figure 2). Three boreholes (MW-2, MW-3, and MW-4) were advanced to a total depth of 16.5 feet below ground surface (bgs). The additional soil boring (SB-1) was advanced to a total depth of 20 feet bgs approximately 6 feet southwest of the MW-3 borehole after no groundwater was encountered during borehole advancement at the MW-3 location. Relatively undisturbed soil samples were collected for lithologic description and possible chemical analysis at 2.5- to 5-foot intervals using a California-modified split-spoon sampler lined with three 6-inch long brass tubes. Soil cuttings generated during field activities were placed in 55-gallon drums and stored on-site pending appropriate disposal.

A *SECOR* geologist described the soil encountered according to the Unified Soil Classification System (USCS) and maintained boring logs of these descriptions that are included as an attachment. A representative soil sample from each sample interval was screened in the field for the presence of volatile organic compounds (VOCs) using an organic vapor meter 580B Photoionization Detector (PID). Screening results are documented on the boring logs. *SECOR* selected one soil sample for chemical analysis from directly above the first encountered groundwater at the MW-2, MW-3, and MW-4 borehole locations.

The ends of the brass tubes containing the soil samples were covered with teflon sheeting, fitted with plastic end caps, labeled, and stored in an ice-filled cooler. The samples selected for chemical analysis were transported to Superior Analytical Laboratory (Superior) in Martinez, California, a state-certified laboratory with a completed chain-of-custody record. The soil samples collected during the investigation were analyzed for TPHg, TPHd, and TPHmo by EPA Method 8015, modified and BTEX by EPA Method 8020.

Monitoring Well Installation

Three boreholes were converted to groundwater monitoring wells MW-2, MW-3, and MW-4 and completed at a total depth of 15 feet bgs after backfilling the borehole with filter sand from 16.5 feet bgs (Figure 2). Each well was completed with 10 feet of capped, flush-threaded, 2-inch diameter Schedule 40 PVC 0.020-inch machine slotted well screen from 15 feet bgs and completed with blank casing to ground surface. Filter sand was placed in the annular space between the wall of the borehole and casing to a height of one foot above the screened interval. One foot of bentonite pellets was placed above the sand and hydrated. A cement-grout mixture (5% bentonite) was then placed into the remaining annular space to ground surface. A flush-mounted, protective water-tight monument cover was then grouted slightly above ground surface to complete the well installation. Each well was also fitted with a locking water-tight well cap. Well construction details are provided on Table 1 and are displayed graphically on the attached boring logs. Due to the absence of groundwater in borehole SB-1, the borehole was backfilled to ground surface with a cement-grout mixture (5% bentonite).

MW
Slow recharge - 3, 2 & 1

Well Development and Sampling

Groundwater monitoring wells were developed on August 16, 1996 by alternately bailing and surging with a PVC bailer. Well development continued until the groundwater was reasonably free of sediment. During well development, measurements and observations of pH, electrical conductivity, temperature, color, and turbidity were recorded on the attached Groundwater Sample Field Data Sheets. Ten casing volumes of groundwater were removed from wells MW-2 and MW-4 during development. Three casing volumes of groundwater were removed from well MW-1, which had been previously developed and sampled in February 1996. Due to slow recharge, only two casing volumes of groundwater were removed from well MW-2. All water generated during well development and sampling was stored in a 55-gallon drum at an on-site location pending appropriate disposal.

Following well development, *SECOR* collected groundwater samples from each well for chemical analysis on August 16, 1996. Due to the slow recharge of well MW-3, *SECOR* collected additional groundwater samples from this well on August 22, 1996 so that all required analyses could be performed by Superior. The groundwater samples were collected using a disposable PVC bailer and decanted directly into laboratory-supplied sample containers. Each of the sample containers was labeled, sealed in plastic bags, and placed in an ice-filled cooler. The samples were submitted to Superior along with a completed chain-of-custody record. The groundwater samples collected were analyzed for TPHg, TPHd, and TPHmo by EPA Method 8015, modified, for BTEX by EPA Method 8020. Analysis of soluble lead by EPA Method 6010 was performed as requested by the ACDEH based on a prior detection of lead during GTI's 1991 subsurface investigation. As requested by the ACDEH, the groundwater sample with the highest reported concentration of TPHd (MW-1) was additionally analyzed for semi-volatile organics by EPA Method 8270 to evaluate the presence of polynuclear aromatic hydrocarbons (PAHs).

WELL SURVEY AND WATER LEVEL MEASUREMENTS

The newly-installed wells and existing Site well were surveyed for the top of PVC casing elevation by Ron Archer, Civil Engineer, Inc. of Pleasanton, California, a California-licensed land surveyor. Table 1 summarizes well construction details and wellhead elevations. Wellhead elevations were surveyed with respect to mean sea level (msl) using the brass disc benchmark stamped No. 195E-9, set in a standard monument casing at the intersection of Coliseum Way and Kevin Court. The elevation of this benchmark was taken at 7.69 feet above msl. Depth-to-groundwater measurements for all Site wells were recorded on August 16 and 22, 1996 using an electronic water-level indicator which are included the attached Hydrologic Data Sheets. These measurements along with calculated groundwater elevations are presented on Table 1.

SUBSURFACE CONDITIONS

Soil beneath the Site consists of fill material extending to approximately 7 to 8 feet bgs overlying Bay Mud that is present to the total depth explored of 20 feet bgs. Fill material consists of yellowish brown to dark greenish gray clay, sandy clay, and gravelly sand and is identified as fill material based on the presence of brick and wood fragments, pieces of asphalt, and oily staining. This interpretation of fill soil is consistent with observations made during UST removal activities in September 1995. Consistency of this material ranged from loose to hard and all fill soil was observed to be moist. Underlying the fill material is Bay Mud which consists of dark greenish gray clay and lesser amounts of sandy clay. Bay Mud deposits were observed to be soft to medium stiff and contained root and plant material. These deposits were typically moist, however, groundwater was observed where pore space was present. The soil encountered

at the SB-1 borehole location was similar to that observed at the MW-3 location.

Results of field screening with the PID indicated the presence of organic vapors at the borehole MW-2 and MW-4 locations ranging from 1 to 28 parts per million (ppm). A chemical odor was also noted in the samples collected at approximately 5 feet bgs in these two wells. The PID did not detect the presence of organic vapors at the MW-3 or SB-1 borehole locations. The field screening results and field observations are included on the attached boring logs.

Groundwater was first encountered at approximately 8 to 9 feet bgs during borehole advancement at the MW-2 and MW-4 locations. On August 16 and 22, 1996, stabilized groundwater measurement in wells MW-1, MW-2, and MW-4 ranged from 4.41 to 5.72 feet below the top of the PVC casing translating to groundwater elevations between 3.98 and 5.65 feet above msl. No groundwater was encountered during borehole advancement at the MW-3 and SB-1 locations. However, *SECOR* constructed a monitoring well at the MW-3 borehole location based on the presence of groundwater at the other nearby well and borehole locations. On August 16, 1996 stabilized groundwater in well MW-3 was measured at a depth of 12.66 feet below top of PVC casing and on August 22, 1996 groundwater was measured in this well at 7.99 feet below top of PVC casing. Groundwater elevations calculated from the August 22, 1996 depth-to-groundwater measurements were contoured and displayed as Figure 3. This map indicates a groundwater flow direction to the northwest under an average hydraulic gradient of 0.15 feet per foot (ft/ft). Depth-to-groundwater measurements and groundwater elevations are summarized on Table 1.

Suspect

SOIL AND GROUNDWATER ANALYTICAL RESULTS

Soil and groundwater analytical results are summarized on Tables 2 and 3 and laboratory analytical reports and chain-of-custody records are attached. Soil samples collected from the MW-2, MW-3, and MW-4 boreholes at depths ranging from 5 to 6 feet bgs was submitted for chemical analysis. Soil sample MW-2-6 was reported to contain TPHg, TPHmo, and BTEX at respective concentrations of 8 milligrams per kilogram (mg/kg), 110 mg/kg, 0.13 mg/kg, 0.02 mg/kg, 0.57 mg/kg, and 1.8 mg/kg. Soil sample MW-4-6 was reported to contain TPHg, TPHmo, toluene, ethylbenzene, and xylenes at respective concentrations of 15 mg/kg, 1,000 mg/kg, 0.049 mg/kg, 0.046 mg/kg, and 0.072 mg/kg. Soil sample MW-3-5 was reported to contain TPHmo and xylenes at repective concentrations of 220 mg/kg and 0.01 mg/kg. TPHd was not detected above the laboratory reporting limit in any of the soil samples analyzed.

The groundwater samples collected from wells MW-1, MW-2, and MW-4 were reported to contain TPHg at respective concentrations of 5,600 micrograms per liter ($\mu g/\ell$), 2,700 $\mu g/\ell$, and 460 $\mu g/\ell$. The maximum BTEX concentrations were reported in the sample collected from well MW-1 at 540 $\mu g/\ell$, 7.3 $\mu g/\ell$, 950 $\mu g/\ell$, and 110 $\mu g/\ell$, respectively. TPHmo was reported in all four of the collected samples at concentrations ranging from 640 $\mu g/\ell$ to 4,000 $\mu g/\ell$. TPHd was also reported in each of the four collected samples at concentrations ranging from 730 $\mu g/\ell$ to 5,400 $\mu g/\ell$; however, Superior indicated that these TPHd results do not resemble a diesel fingerprint and can be attributed to both lighter and heavier hydrocarbons in the diesel range. Soluble lead was not detected in any of these samples above the laboratory reporting limit of 0.05 milligrams per liter. Laboratory analysis of the MW-1 sample for PAHs reported the presence of naphthalene (260 $\mu g/\ell$) and 2-methyl-naphthalene (93 $\mu g/\ell$). Groundwater analytical results are displayed graphically on Figure 4.

SUMMARY

The results of this additional Site characterization and previous investigations can be summarized by the

following:

- Soil beneath the Site consists of fill material containing asphaltic material and heavy-oil staining present to approximate depths of 7 to 8 feet bgs overlying Bay Mud that is present to at least 20 feet bgs.
- Groundwater is present beneath the Site at approximately 5 to 8 feet bgs and flows in a general northwest direction within fill soil and low-yielding Bay Mud deposits.
- Gasoline- and diesel-range petroleum hydrocarbons which appear to be related to the former Site USTs are present in groundwater in the vicinity of the former UST excavation.
- High-boiling point petroleum hydrocarbons (motor-oil range), not related to the former Site USTs, are pervasive in fill soil encountered beneath the Site and in groundwater.
- Lead and PAHs do not appear to have significantly impacted soil and groundwater beneath the Site.

RECOMMENDATIONS

Based on the results of this investigation and previous Site activities, *SECOR* on behalf of Metz, recommends that the Site continue to be evaluated with respect to Risk-Based Corrective Action (RBCA). The results of this additional Site characterization indicate that the extent of petroleum hydrocarbons related to the former USTs beneath the Site requires further definition. *SECOR* recommends the installation of at least three additional groundwater monitoring wells to further delineate the extent of petroleum hydrocarbons related to the former USTs (TPHg, TPHd, and BTEX) and further assess groundwater flow patterns beneath the Site and vicinity. After the Site has been adequately characterized, *SECOR* recommends that Site closure be pursed utilizing a RBCA-approach. *SECOR* also recommmends that based on the results of this investigation analysis of lead and PAHs be discontinued.

If you have any questions or comments, please do not hesitate to contact us at (415) 882-1548.

Sincerely,

SECOR International Incorporated

Liping Zhang
Staff Geologist

Donald W. Moore, R.G.
Project Manager

REGISTERED GEOLOGIST
DONALD W. MOORE
No. 6197
Exp. 8/97
STATE OF CALIFORNIA

Bruce E. Scarbrough, R.G.
Principal Geologist

cc: Mr. Christopher Rants, Metz Baking Company

Attachments:

Table 1 - Well Construction Details and Groundwater Elevations
Table 2 - Soil Analytical Results
Table 3 - Groundwater Analytical Results

Figure 1 - Site Location Map
Figure 2 - Site Plan
Figure 3 - Groundwater Elevation Contour Map, August 22, 1996
Figure 4 - Groundwater Chemical Results, August 16 and 22, 1996

Boring Logs
Hydrologic and Groundwater Sample Field Data Sheets
Laboratory Analytical Results and Chain-of-Custody Records

TABLE 1
WELL CONSTRUCTION DETAILS AND GROUNDWATER ELEVATIONS
580 Julie Ann Way
Oakland, California

WELL NUMBER	TOTAL DEPTH[a]	SCREENED INTERVAL[a]	CASING DIAMETER[b]	TOP OF CASING ELEVATION[c]	DATE	DEPTH TO GROUNDWATER[d]	GROUNDWATER ELEVATION[c]
MW-1	14.5	4.5-14.5	2	10.06	8/16/96 8/22/96	4.41 4.45	5.65 5.61
MW-2	15	5-15	2	10.17	8/16/96 8/22/96	4.52 4.54	5.65 5.63
MW-3	15	5-15	2	10.12	8/16/96 8/22/96	12.66 7.99	-2.54 2.13
MW-4	15	5-15	2	9.70	8/16/96 8/22/96	5.72 5.72	3.98 3.98

Suspect

NOTES:
(a) Measured in feet below ground surface.
(b) Measured in inches.
(c) Measured in feet above mean sea level.
(d) Measured in feet below top of PVC casing.

TABLE 2
SOIL ANALYTICAL RESULTS
580 Julie Ann Way
Oakland, California

SAMPLE NUMBER	SAMPLE DEPTH[a]	TPHg[b] (mg/kg)[c]	TPHd[d] (mg/kg)	TPHmo[e] (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
MW-2-6	6.0-6.5	8	ND[f] < 1	110	0.13	0.02	0.57	1.8
MW-3-5	5.0-5.5	ND < 1	ND < 10	220	ND < 0.005	ND < 0.005	ND < 0.005	0.01
MW-4-6	6.0-6.5	15	ND < 10	1,000	ND < 0.005	0.049	0.046	0.072

NOTES:

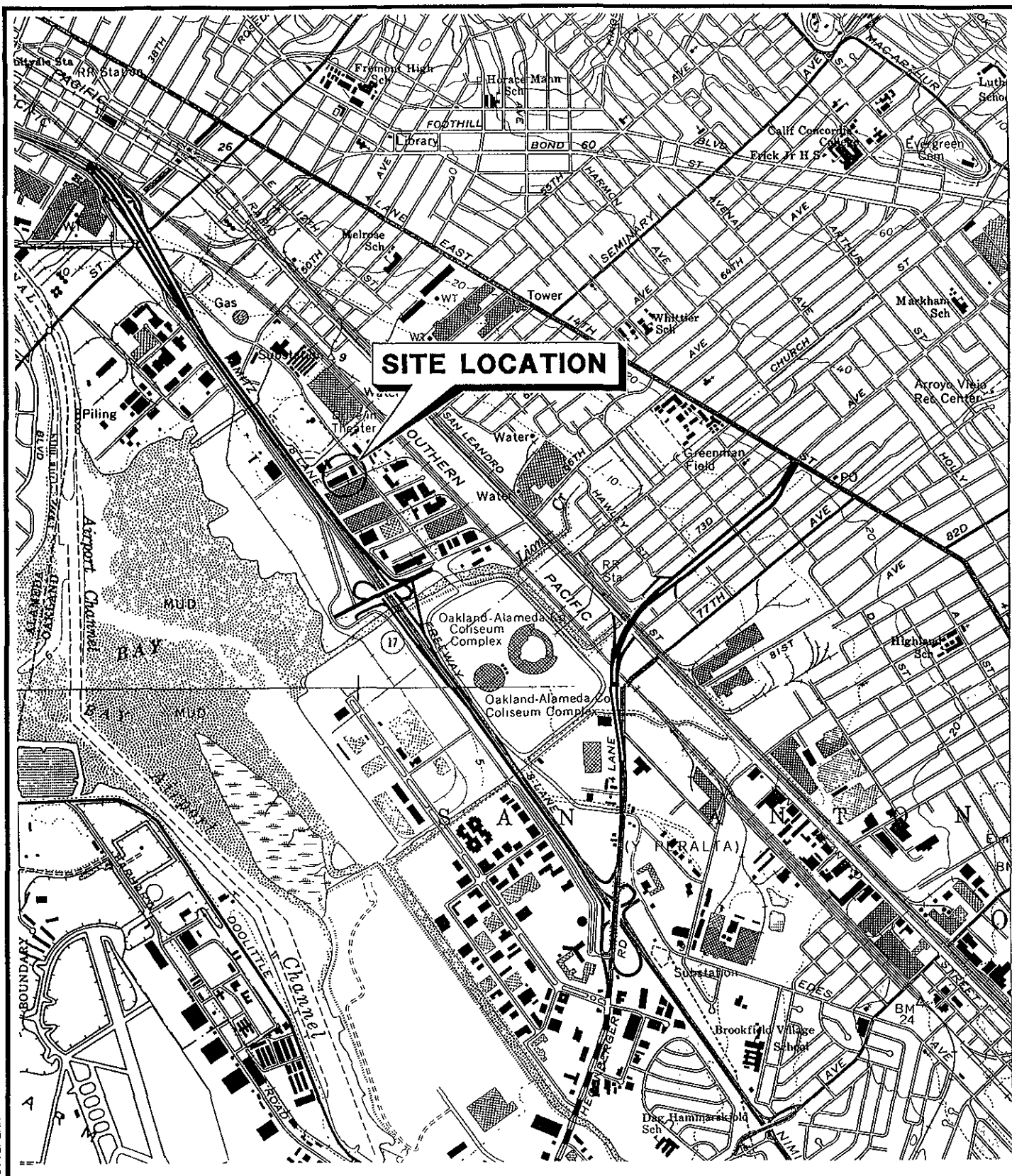
(a) Measured in feet below ground surface.
(b) Total petroleum hydrocarbons as gasoline.
(c) Milligrams per kilogram.
(d) Total petroleum hydrocarbons as diesel.
(e) Total petroleum hydrocarbons as motor oil.
(f) ND: Not detected at specified laboratory reporting limit.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
580 Julie Ann Way
Oakland, California

SAMPLE NUMBER	DATE	TPHg[a] (µg/ℓ)[b]	TPHd[c] (µg/ℓ)	TPHmo[d] (µg/ℓ)	Benzene (µg/ℓ)	Toluene (µg/ℓ)	Ethylbenzene (µg/ℓ)	Xylenes (µg/ℓ)	Lead (mg/ℓ)[e]
MW-1	2/28/96 8/16/96	5,900 5,600	ND[f]<10 0 5,400*	1,700 4,000	540 540	9.0 7.3	950 950	110 110	NA[g] ND<0.05
MW-2	8/16/96	2,700	3,000*	1,800	63	36	65	100	ND<0.05
MW-3	8/16/96	ND<50	730*	640	3.1	ND<0.5	ND<0.5	ND<0.5	ND <0.05
MW-4	8/16/96	460	2,800*	3,000	17	1.0	9.1	1.4	ND<0.05

NOTES:

(a) Total petroleum hydrocarbons as gasoline.
(b) Micrograms per liter.
(c) Total petroleum hydrocarbons as diesel.
(d) Total petroleum hydrocarbons as motor oil.
(e) Milligrams per liter.
(f) ND: Not detected at specified laboratory reporting limit
(g) NA: Not Analyzed.
* Lighter and heavier hydrocarbons were found in the range of diesel, but do not resemble a diesel fingerprint. Possible gasoline and motor oil, see attached certified laboratory analytical report.



SOURCE: BASE MAP FROM U.S.G.S. OAKLAND EAST AND SAN LEANDRO CA QUADRANGLES. 7.5 MINUTE SERIES TOPOGRAPHIC MAP, PHOTOREVISED 1980.

SECOR
INTERNATIONAL INCORPORATED

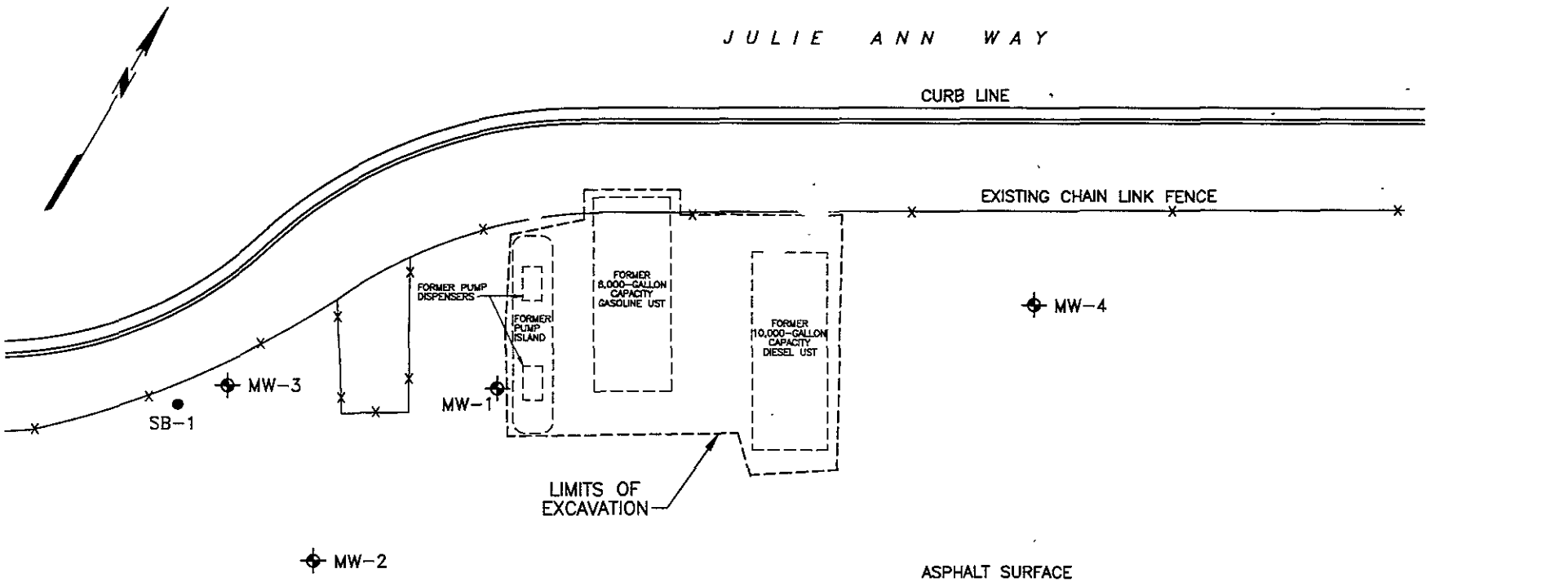
DRAWN	CCR
APPR	DWM
DATE	12OCT95
JOB NO.	70007-001-01

FIGURE 1
SAN FRANCISCO FRENCH BREAD
580 JULIE ANN WAY
OAKLAND, CALIFORNIA

SITE LOCATION MAP

199510.171511 X:\SF-BREAD\JULIE\SITEPLAN

199608.280804 X:\SF-BREAD\JULIE\580JULIE



LEGEND:

- ● SB-1 SOIL BORING LOCATION
- ⊕ MW-1 GROUNDWATER MONITORING WELL

EXISTING BUILDING

REFERENCE: RON ARCHER CIVIL ENGINEER INC., DATED AUGUST 15, 1996.

0 20 40
SCALE FEET

SECOR
INTERNATIONAL INCORPORATED

DRAWN	CCR
APPR	DWM
DATE	28AUG96
JOB NO.	50090-009-03

FIGURE 2
580 JULIE ANN WAY
OAKLAND, CALIFORNIA

SITE PLAN

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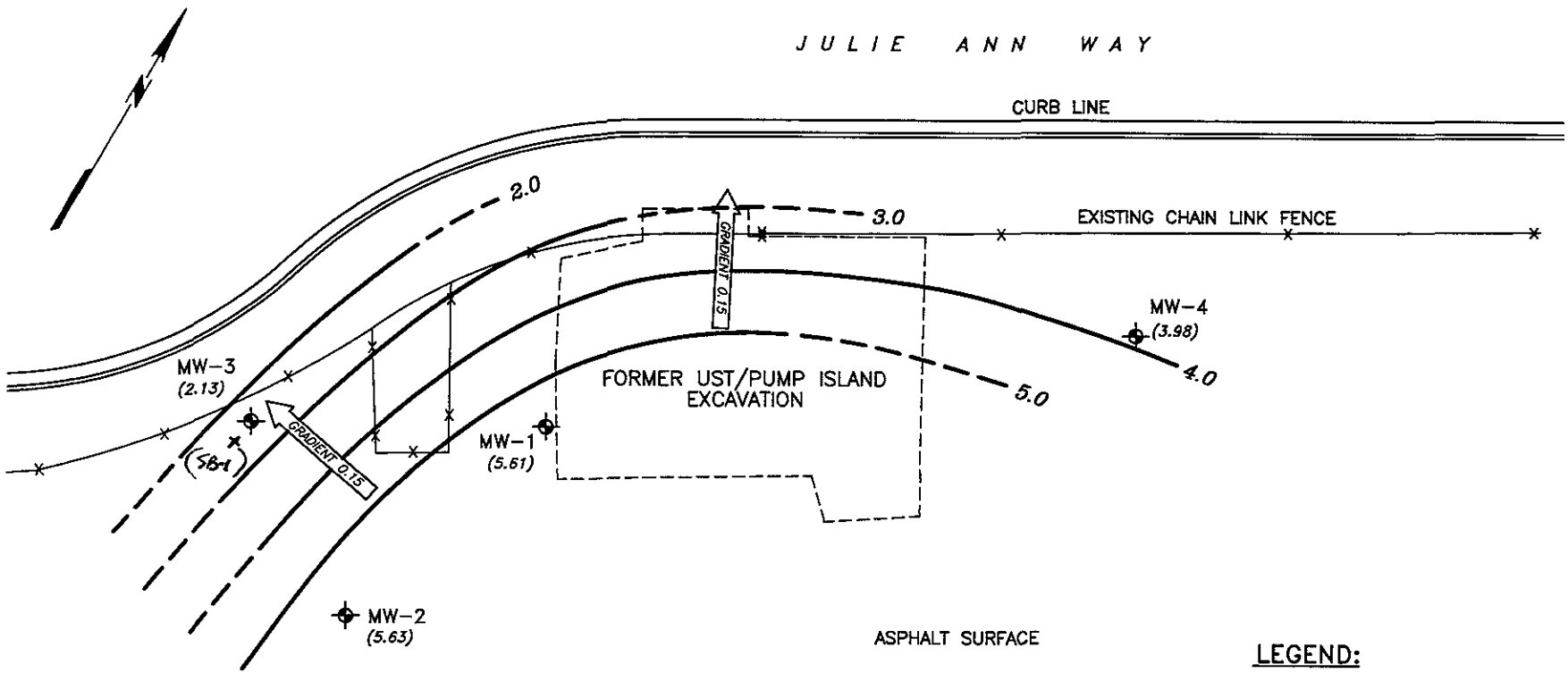

LEGEND:

MW-1	GROUNDWATER MONITORING WELL
3.0	GROUNDWATER ELEVATION CONTOUR (FEET ABOVE MEAN SEA LEVEL)
(3.98)	GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
GRADIENT 0.15	APPROXIMATE GROUNDWATER FLOW DIRECTION IN FT/FT

EXISTING BUILDING

REFERENCE: RON ARCHER CIVIL ENGINEER INC., DATED AUGUST 15, 1996.

0 20 40
SCALE FEET

SECOR
INTERNATIONAL INCORPORATED

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APPR	DWM
DATE	28AUG96
JOB NO.	50090-009-03

FIGURE 3
580 JULIE ANN WAY
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP - AUGUST 22, 1996

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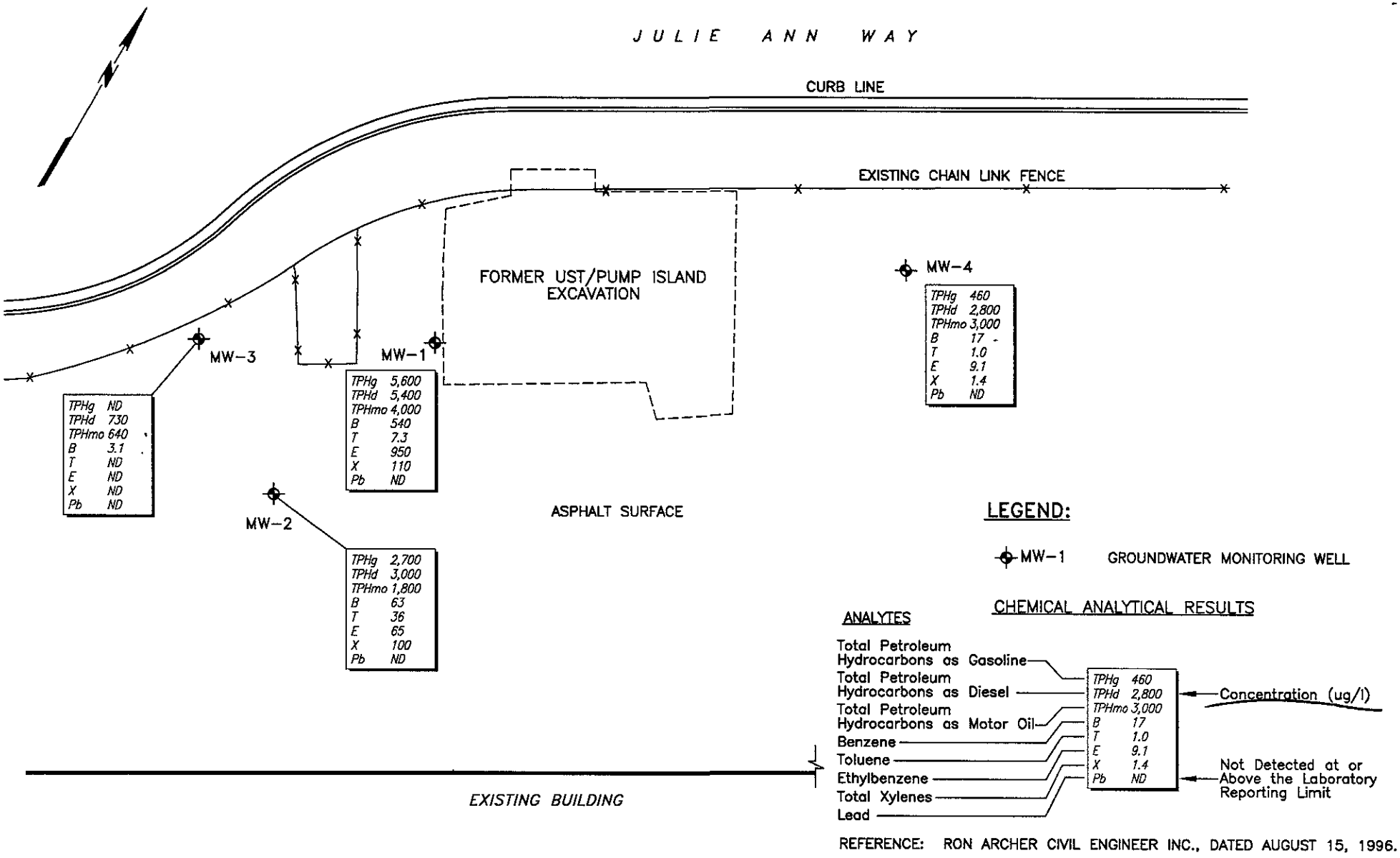

REFERENCE: RON ARCHER CIVIL ENGINEER INC., DATED AUGUST 15, 1996.

0 20 40
SCALE FEET

SECOR
INTERNATIONAL INCORPORATED

DRAWN	CCR
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DATE	28AUG96
JOB NO.	50090-009-03

FIGURE 4
580 JULIE ANN WAY
OAKLAND, CALIFORNIA

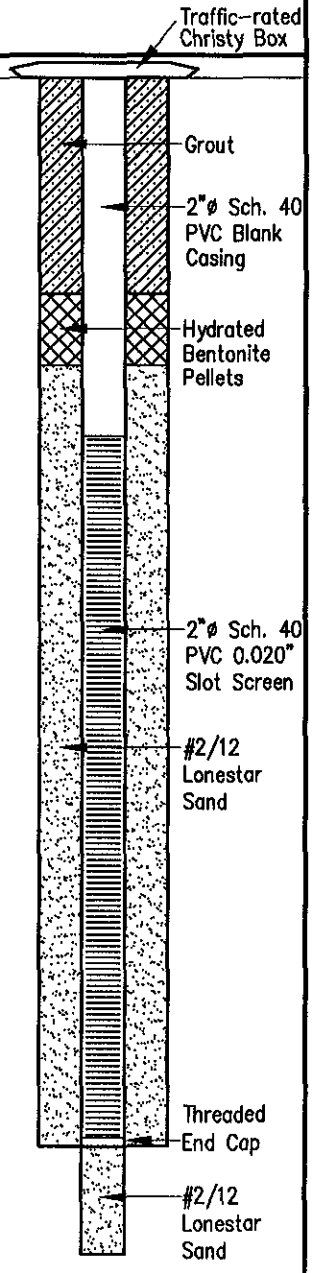
GROUNDWATER CHEMICAL RESULTS-AUGUST 16 AND 22, 1996

Project: 580 JULIE ANN WAY, OAKLAND, CA			Log of Boring/Monitoring Well: **MW-2**
Boring Location: SOUTHWEST OF FORMER USTs	Project No.: 50090-009-03		
Subcontractor and Equipment: BAYLAND DRILLING CME 75 HT	Logged By: L.Z.	Drawn By: C.R.	
Sampling Method: CAL. MOD. SPLIT SPOON	Monitoring Device: OVM 580B		Comments:
Start Date/Time: 8/14/96//0800	Finish Date/Time: 8/14/96//0920		
First Water (bgs): 9.0 FEET	Stabilized Water Level (bgs): 4.52 FEET		

Surface Elevation: 10.36 FT. Casing Top Elevation: 10.17 FT.

Sample Number	Blows/foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
	HAND AUGER		0				ASPHALT/BASEROCK
			1				GREENISH GRAY (5G 5/1) SANDY CLAY (CL) with gravel, fine- to coarse-grained sand, fine to coarse gravel, hard, moist, slight chemical odor (10,20,0,70) (FILL)
			2				
			3				
			4				
			5				DARK GREENISH GRAY (5G 4/1) SANDY CLAY (CL) trace fine gravel, medium- to coarse-grained sand, very stiff, moist (5,20,0,75) (FILL)
MW-2-6	20	16	6				VERY DARK GRAY (N 3/) CLAY (CL) with sand, trace gravel, medium- to coarse-grained sand, fine gravel, very stiff, moist, wood fragments, slight chemical odor (5,10,0,85) (FILL)
			7				
			8				
			9				DARK GREENISH GRAY (5G 4/1) CLAY (CL) soft, moist to wet, root material (0,0,0,100) (BAY MUD)
	1	0	10				
			11				
			12				
			13				
			14				
			15				
	7	4	16				
			17				
			18				
			19				
			20				

Boring Abandonment/ Well Construction Details



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SECOR

Reviewed By: _____ Date: _____

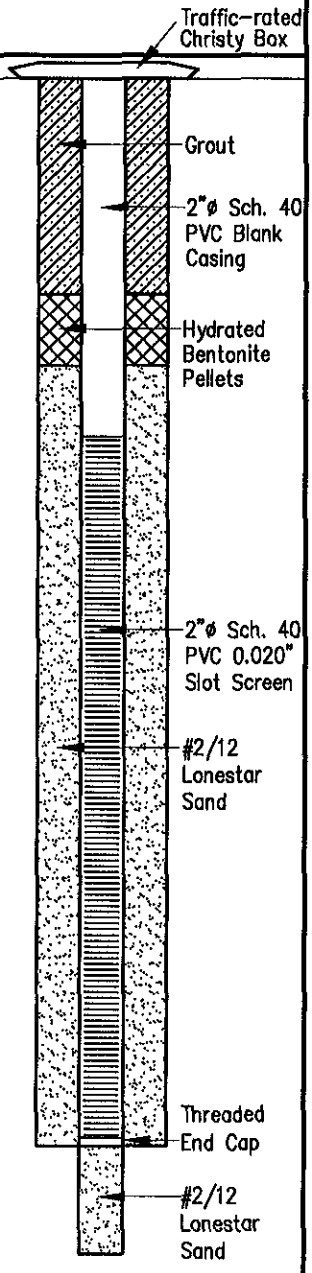
Revised By: _____ Date: _____

Project: 580 JULIE ANN WAY, OAKLAND, CA			Log of Boring/Monitoring Well: **MW-3**
Boring Location: WEST OF FORMER USTs	Project No.: 50090-009-03		
Subcontractor and Equipment: BAYLAND DRILLING CME 75 HT	Logged By: L.Z.	Drawn By: C.R.	
Sampling Method: CAL. MOD. SPLIT SPOON	Monitoring Device: OVM 580B		Comments:
Start Date/Time: 8/14/96//0930	Finish Date/Time: 8/14/96//1040		
First Water (bgs): NOT ENCOUNTERED	Stabilized Water Level (bgs): 12.66 FEET		

Surface Elevation: 10.39 FT. Casing Top Elevation: 10.12 FT.

Sample Number	Blows/foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
	HAND AUGER		0				ASPHALT/BASEROCK
			1				GREENISH GRAY (5G 5/1) GRAVELLY SAND (SW) fine- to coarse-grained, trace clay, fine to coarse gravel, loose, moist (20,75,0,5) (FILL)
			2				
			3				
			4				YELLOWISH BROWN (10YR 5/6) SANDY CLAY (CL) trace fine gravel, medium- to coarse-grained sand, stiff, moist (5,20,0,75) (FILL)
MW-3-5			5				
	14	0	6				VERY DARK GRAY (N 3/) SANDY CLAY (CL) with gravel, fine- to coarse-grained sand, fine to coarse gravel, stiff, moist, wood fragments (10,20,0,70) (FILL)
			7				
MW-3-8.5	18	0	8				YELLOWISH BROWN (10YR 5/6) SANDY CLAY (CL) trace fine gravel, medium- to coarse-grained sand, very stiff, moist (5,15,0,80)
			9				
			10				DARK GREENISH GRAY (5G 4/1) CLAY (CL) medium stiff, moist, plant and root material (0,0,0,100) (BAY MUD)
	5	0	11				
			12				
			13			▼	
			14				DARK GREENISH GRAY (5BG 4/1) SANDY CLAY (CL) trace fine gravel, coarse-grained sand, stiff, moist, root and wood material (5,15,0,80) (BAY MUD)
	9	0	15				
			16				
			17				
			18				
			19				
			20				

Boring Abandonment/ Well Construction Details



199608 151910 E:\LOGS\SFFBC\OAKLAND\MW-3

SECOR

Reviewed By: _____ Date: _____

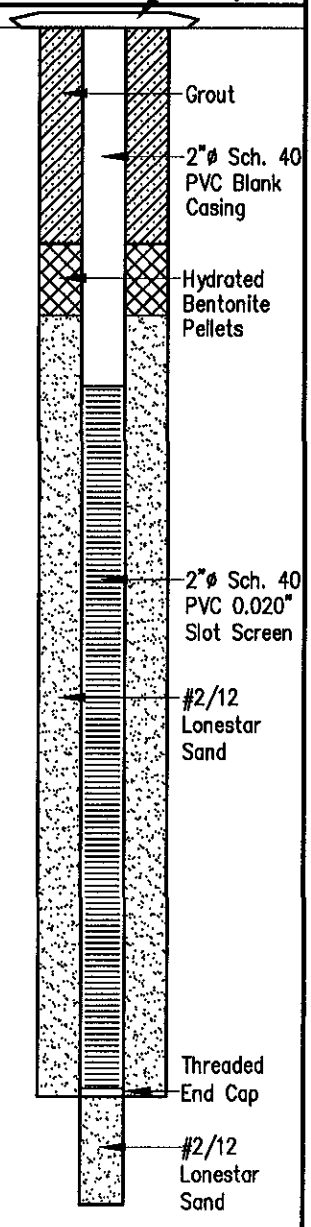
Revised By: _____ Date: _____

Project: 580 JULIE ANN WAY, OAKLAND, CA			Log of Boring/Monitoring Well: **MW-4**
Boring Location: EAST OF FORMER USTs	Project No.: 50090-009-03		
Subcontractor and Equipment: BAYLAND DRILLING CME 75 HT	Logged By: L.Z.	Drawn By: C.R.	
Sampling Method: CAL. MOD. SPLIT SPOON	Monitoring Device: OVM 580B		Comments:
Start Date/Time: 8/14/96//1110	Finish Date/Time: 8/14/96//1210		
First Water (bgs): 8.0 FEET	Stabilized Water Level (bgs): 5.72 FEET		

Surface Elevation: 9.86 FT. Casing Top Elevation: 9.70 FT.

Sample Number	Blows/foot	PID (ppm)	Depth (Feet)	Recovery	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
	HAND AUGER		0				ASPHALT/BASEROCK
			1				VERY DARK BROWN (10YR 2/2) SANDY CLAY (CL) with gravel, fine- to coarse-grained sand, fine to coarse gravel, very stiff, moist, brick and wood fragments (10,20,0,70) (FILL)
			2				
			3				
			4				
			5				
MW-4-6	19	28	6				DARK GREENISH GRAY (5G 4/1) SANDY CLAY (CL) with gravel, fine- to coarse-grained sand, fine to coarse gravel, stiff, moist, wood fragments, black oily staining, chemical odor (10,15,0,75) (FILL)
MW-4-7.5			7				
	1	6	8				DARK GREENISH GRAY (5G 4/1) CLAY (CL) soft, moist to wet, plant and root material (0,0,0,100) (BAY MUD)
			9				
			10				
	1	1	11				
			12				
			13				
			14				
			15				
	13	2	16				grades stiff, with trace fine gravel (5,0,0,95)
			17				
			18				
			19				
			20				

Boring Abandonment/ Well Construction Details



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SECOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

SECOR International Incorporated

HYDROLOGIC DATA SHEET

Date: 8/16/96 Project: SFFB Julie Ann Way Project #: 30090-009-03

Sampler: LT Page 1 of 1

WELL or LOCATION	TIME	MEASUREMENT					COMMENTS
		TOC	DTW	DTB	DIA	ELEV	
MW-3	0850		12.66	14.61	2"		
MW-2	0855		4.52	14.46	2"		
MW-1	0859		4.41	14.26	2"		
MW-4	0905		5.72	14.60	2"		
Drum	Inventory:						
	Soil: 5						
	Decon Water: 2						
	Purge Water: 1						

TOC = Top of Well Casing Elevation
DTW = Depth to Groundwater Below TOC
DTB = Depth to Bottom of Well Casing Below TOC
DIA = Well Casing Diameter
ELEV = Groundwater Elevation

SECOR International Incorporated

HYDROLOGIC DATA SHEET

Date: 8/22/96 Project: 10090-009-02 Project #: SFFB Lake Ann Way

Sampler: LB Page 1 of 1

WELL or LOCATION	TIME	MEASUREMENT					COMMENTS
		TOC	DTW	DTB	DIA	ELEV	
MW-1	0948		4.45				
MW-2	0927		4.54				
MW-3	0945		7.99				
MW-4	0921		5.72				

TOC = Top of Well Casing Elevation
DTW = Depth to Groundwater Below TOC
DTB = Depth to Bottom of Well Casing Below TOC
DIA = Well Casing Diameter
ELEV = Groundwater Elevation

SEACOR
WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 5009-009-03
PURGED BY: LZ
SAMPLED BY: LZ

WELL ID: MW-1
SAMPLE ID: MW-1
CLIENT NAME: SFFB Julie Ann Way
LOCATION: Oakland, CA

TYPE: Groundwater ✓ Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ✓ 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION: (feet/MSL):		VOLUME IN CASING (gal.)	1.7
DEPTH TO WATER (feet):	4.41	CALCULATED PURGE (gal.)	5.1
DEPTH OF WELL (feet):	14.26	ACTUAL PURGE VOL. (gal.)	5.5

DATE PURGED: 8/16/96 Start (2400 Hr) 1225 End (2400 Hr.) 1240
DATE SAMPLED: 8/16/96 Start (2400 Hr) ____ End (2400 Hr.) 1250

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, X-DUP-1): ____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (~~NTU~~ visual)
1230	2	7.81	2310	82.5	Tan	low
1235	4	7.64	2340	79.9	"	"
1240	5.5	7.20	2240	77.1	"	"

D.O. (ppm): ____ COLOR, COBALT (0-100): ____

Clear
Cloudy
Yellow
Brown

ODOR: Faint chemical odor, light sheen

PURGING EQUIPMENT

____ 2" Bladder Pump
____ Centrifugal Pump
____ Submersible Pump
____ Well Wizard™
____ Bailer(Teflon®)
____ Bailer (PVC)
____ Bailer (Stainless Steel)
____ Dedicated

Other: Disposable Bailer

SAMPLING EQUIPMENT

____ 2" Bladder Pump
____ DDL Sampler
____ Submersible Pump
____ Well Wizard™
____ Bailer(Teflon®)
X Bailer (PVC disposable)
____ Bailer (Stainless Steel)
____ Dedicated

Other: ____

WELL INTEGRITY: Good LOCK #: ____
REMARKS: ____

SIGNATURE: ____ Page 1 of 1

SEACOR
WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 5009-009-03
PURGED BY: CZ
SAMPLED BY: CZ

WELL ID: MW-2
SAMPLE ID: MW-2
CLIENT NAME: SFFB Julie Ann Way
LOCATION: Oakland, CA

TYPE: Groundwater ✓ Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ✓ 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION: (feet/MSL):		VOLUME IN CASING (gal.)	1.7
DEPTH TO WATER (feet):	4.52	CALCULATED PURGE (gal.)	17
DEPTH OF WELL (feet):	14.46	ACTUAL PURGE VOL. (gal.)	17

DATE PURGED: 8/16/96 Start (2400 Hr) 1015 End (2400 Hr.) 1040
DATE SAMPLED: 8/16/96 Start (2400 Hr) ____ End (2400 Hr.) 1050

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, X-DUP-1): ____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal)	pH (units)	E.C. (umhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (NTU) - visual
1022	5	7.60	7160	81.9	Dark Grey	High
1030	10	7.52	6640	83.0	✓	✓
1040	17	7.74	6580	82.1	✓	✓

D.O. (ppm): ____ COLOR, COBALT (0-100): ____

Clear
Cloudy
Yellow
Brown

ODOR: Organic Odor, light sheen

PURGING EQUIPMENT

____	2" Bladder Pump	____	Bailer(Teflon®)
____	Centrifugal Pump	X	Bailer (PVC)
____	Submersible Pump	____	Bailer (Stainless Steel)
____	Well Wizard™	____	Dedicated

Other: ____

SAMPLING EQUIPMENT

____	2" Bladder Pump	____	Bailer(Teflon®)
____	DDL Sampler	X	Bailer (PVC)(disposable)
____	Submersible Pump	____	Bailer (Stainless Steel)
____	Well Wizard™	____	Dedicated

Other: ____

WELL INTEGRITY: Good LOCK #: ____

REMARKS: ____

SIGNATURE: ____ Page 1 of 1

SEACOR
WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 5009-009-03
PURGED BY: CZ
SAMPLED BY: CZ

WELL ID: MW-3
SAMPLE ID: MW-3
CLIENT NAME: SFFB Julie Ann Hey
LOCATION: Oakland, CA

TYPE: Groundwater ✓ Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ✓ 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION: (feet/MSL):		VOLUME IN CASING (gal.)	0.3
DEPTH TO WATER (feet):	12.66	CALCULATED PURGE (gal.)	3.0
DEPTH OF WELL (feet):	14.61	ACTUAL PURGE VOL. (gal.)	0.6

DATE PURGED: 8/16/96 Start (2400 Hr) 0930 End (2400 Hr.) 0945
DATE SAMPLED: ____ Start (2400 Hr) ____ End (2400 Hr.) 1215

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, X-DUP-1): ____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (NTU) visual
0940	0.5	8.05	19280	74.0	Gray	High
0945	0.6	7.74	19050	70.8	40	↓

D.O. (ppm): ____ COLOR, COBALT (0-100): ____

Clear
Cloudy
Yellow
Brown

ODOR: ____

PURGING EQUIPMENT

____	2" Bladder Pump	____	Bailer(Teflon®)
____	Centrifugal Pump	____	Bailer (PVC)
____	Submersible Pump	✓	Bailer (Stainless Steel)
____	Well Wizard™	____	Dedicated

Other: ____

SAMPLING EQUIPMENT

____	2" Bladder Pump	____	Bailer(Teflon®)
____	DDL Sampler	✓	Bailer (PVC/disposable)
____	Submersible Pump	____	Bailer (Stainless Steel)
____	Well Wizard™	____	Dedicated

Other: ____

WELL INTEGRITY: Good LOCK #: ____
REMARKS: Well went dry at 0.6 gallons

SIGNATURE: ____ Page 1 of 1

SEACOR
WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 5009-004-03
PURGED BY: CZ
SAMPLED BY: CZ

WELL ID: MW-4
SAMPLE ID: MW-4
CLIENT NAME: SFR Indie Run Way
LOCATION: Oakland, CA

TYPE: Groundwater ✓ Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ✓ 3 ____ 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION: (feet/MSL):		VOLUME IN CASING (gal.)	1.5
DEPTH TO WATER (feet):	5.72	CALCULATED PURGE (gal.)	15
DEPTH OF WELL (feet):	14.60	ACTUAL PURGE VOL. (gal.)	15

DATE PURGED: 8/16/96 Start (2400 Hr) 1110 End (2400 Hr.) 1138
DATE SAMPLED: 8/16/96 Start (2400 Hr) ____ End (2400 Hr.) 1150

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, X-DUP-1): ____

FIELD MEASUREMENTS

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm@25°C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (NTU) visual
1120	5	7.23	7650	81.3	Dark Gray	High
1128	10	7.22	6850	83.3	〃	〃
1133	12	7.00	6490	83.3	〃	〃
1138	15	6.92	5970	79.8	〃	〃

D.O. (ppm): ____ COLOR, COBALT (0-100): ____

ODOR: ____

Clear
Cloudy
Yellow
Brown

PURGING EQUIPMENT

____	2" Bladder Pump	____	Bailer(Teflon®)
____	Centrifugal Pump	X	Bailer (PVC)
____	Submersible Pump	____	Bailer (Stainless Steel)
____	Well Wizard™	____	Dedicated

Other: ____

SAMPLING EQUIPMENT

____	2" Bladder Pump	____	Bailer(Teflon®)
____	DDL Sampler	X	Bailer (PVC)(disposable)
____	Submersible Pump	____	Bailer (Stainless Steel)
____	Well Wizard™	____	Dedicated

Other: ____

WELL INTEGRITY: Good LOCK #: ____

REMARKS: ____

SIGNATURE: ____ Page 1 of 1

Superior Analytical Laboratory

SECOR
90 NEW MONTGOMERY ST. #620
SAN FRANCISCO, CA, 94105

Date: August 22, 1996

Attn: Donald Moore

Laboratory Number : 21747

Project Number/Name : 50090-009-03 TASK
Facility/Site : SFFB JULIE ANN WAY

Dear Donald Moore:

Attached is Superior Analytical Laboratory report for the samples received on August 15, 1996. This report has been reviewed and approved for release. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after September 14, 1996, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Superior
Analytical Laboratory

CASE NARRATIVE

SECOR
Project Number/Name: 50090-009-03 TASK 002
Laboratory Number: 21747

Sample Receipt

Nine soil samples were received by Superior Analytical Laboratory on August 15, 1996.

Cooler temperature was 2.5°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analysed for methods 8015M, 8020 and HOLD.

TPH/8015

- The surrogate recovery was high due to the presence of interfering compounds in the sample.

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior
Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 22, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Chronology

Laboratory Number 21747

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW2-6	08/14/96	08/15/96	08/20/96	08/22/96	CH203.02	01
MW3-5	08/14/96	08/15/96	08/20/96	08/20/96	CH203.02	02
MW4-6	08/14/96	08/15/96	08/20/96	08/22/96	CH203.02	04

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CH203.02-01	Method Blank	MB	Soil	08/20/96	08/20/96
CH203.02-02	Laboratory Spike	LS	Soil	08/20/96	08/20/96
CH203.02-03	Laboratory Spike Duplicate	LSD	Soil	08/20/96	08/20/96
CH203.02-04	MW3-5	MS 21747-02	Soil	08/20/96	08/20/96
CH203.02-05	MW3-5	MSD 21747-02	Soil	08/20/96	08/20/96

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 22, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21747-01	MW2-6	Soil	1.0	-
21747-02	MW3-5	Soil	10.0	-
21747-04	MW4-6	Soil	10.0	-

R E S U L T S O F A N A L Y S I S

Compound	21747-01 Conc. mg/kg	RL	21747-02 Conc. mg/kg	RL	21747-04 Conc. mg/kg	RL
Diesel:	ND	1	ND	10	ND	10
Motor Oil	110@	20	220	200	1000@	200
>> Surrogate Recoveries (%) <<						
Tetracosane	108		148		177I	

Superior
Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21747
Method Blank(s)

	CH203.02-01 Conc. mg/Kg	 RL
Diesel:	ND	1
Motor Oil	ND	20
>> Surrogate Recoveries (%) <<		
Tetracosane	100	

Superior
Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21747

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
		For Soil Matrix (mg/Kg)				
	CH203.02	02 / 03 - Laboratory Control Spikes				
Diesel:		33	34/34	103/103	50-150	0
>> Surrogate Recoveries (%) <<						
Tetracosane				94/95	50-150	
		For Soil Matrix (mg/Kg)				
	CH203.02	04 / 05 - Sample Spiked: 21747 - 02				
Diesel:	34	33	49C/84G	45/152	50-150	109
>> Surrogate Recoveries (%) <<						
Tetracosane				112/154I	50-150	

I - The surrogate recovery was high due to the presence of interfering compounds in the sample.

@ - Gasoline also present.
C - The Matrix Spike recovery is not meaningful due to the high concentration of the analyte in the sample relative to the spike
G - The variation in spike recoveries reflects the nonhomogeneity of the sample.

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 20, 1996

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 21747

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW2-6	08/14/96	08/15/96	08/20/96	08/20/96	CH191.37	01
MW3-5	08/14/96	08/15/96	08/19/96	08/19/96	CH191.37	02
MW4-6	08/14/96	08/15/96	08/19/96	08/19/96	CH191.37	04

QC Samples

QC Batch #	QC Sample ID	Type	Ref.	Matrix	Extract.	Analyzed
CH191.37-02	Laboratory Spike	LS		Soil	08/19/96	08/19/96
CH191.37-09	B3-2.0	MS	21726-04	Soil	08/19/96	08/19/96
CH191.37-10	B3-2.0	MSD	21726-04	Soil	08/19/96	08/19/96
CH191.37-19	Method Blank	MB		Soil	08/19/96	08/19/96
CH191.37-03	Laboratory Spike	LS		Soil	08/19/96	08/19/96
CH191.37-12	B3-2.0	MS	21726-04	Soil	08/19/96	08/19/96
CH191.37-13	B3-2.0	MSD	21726-04	Soil	08/19/96	08/19/96

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 20, 1996

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21747-01	MW2-6	Soil	2.0	-
21747-02	MW3-5	Soil	1.0	-
21747-04	MW4-6	Soil	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21747-01 Conc. mg/kg	21747-01 RL	21747-02 Conc. mg/kg	21747-02 RL	21747-04 Conc. mg/kg	21747-04 RL
Gasoline_Range	8	2	ND	1	15	1
Benzene	0.13	0.010	ND	0.005	ND	0.005
Toluene	0.020	0.010	ND	0.005	0.049	0.005
Ethyl Benzene	0.57	0.010	ND	0.005	0.046	0.005
Xylenes	1.8	0.010	0.010	0.005	0.072	0.005
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)	105		86		119	

Superior
Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 21747
Method Blank(s)

	CH191.37-19 Conc. mg/kg	RL
Gasoline_Range	ND	1
Benzene	ND	0.005
Toluene	ND	0.005
Ethyl Benzene	ND	0.005
Xylenes	ND	0.005
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	105	

Superior Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range, quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 21747

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Soil Matrix (mg/kg)						
CH191.37 02 / - Laboratory Control Spikes						
Benzene		0.100	0.095	95	65-125	
Toluene		0.100	0.097	97	65-125	
Ethyl Benzene		0.100	0.098	98	65-125	
Xylenes		0.300	0.30	100	65-125	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				102	50-150	
For Soil Matrix (mg/kg)						
CH191.37 03 / - Laboratory Control Spikes						
Gasoline_Range		10	9	90	65-135	
For Soil Matrix (mg/kg)						
CH191.37 09 / 10 - Sample Spiked: 21726 - 04						
Benzene	ND	0.100	0.092/0.089	92/89	65-125	3
Toluene	ND	0.100	0.090/0.086	90/86	65-125	5
Ethyl Benzene	ND	0.100	0.089/0.083	89/83	65-125	7
Xylenes	ND	0.300	0.28/0.25	93/83	65-125	11
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				91/93	50-150	
For Soil Matrix (mg/kg)						
CH191.37 12 / 13 - Sample Spiked: 21726 - 04						
Gasoline_Range	ND	10	7/7.0	70/70	65-135	0

Superior
Analytical Laboratory

Narrative:

Definitions:

ND	=	Not Detected
RL	=	Reporting Limit
NA	=	Not Analysed
RPD	=	Relative Percent Difference
ug/L	=	parts per billion (ppb)
mg/L	=	parts per million (ppm)
ug/kg	=	parts per billion (ppb)
mg/kg	=	parts per million (ppm)

2147

Chain-of-Custody Number:

SEACOR Chain-of-Custody Record

☐ Additional documents are attached, and are a part of this Record.

Field Office: San Francisco
Address: 90 New Montgomery St. #620
San Francisco, CA 94105

Job Name: SFFB Julie Ann Way
Location: Oakland, CA

Project # 5009-009-03 Task # 002
Project Manager Don Moore
Laboratory Superior
Turnaround Time Standard

Sampler's Name Liping Zhang
Sampler's Signature

	Sample ID	Date	Time	Matrix
1	MW-2-6	8/14	0823	Soil
2	MW-3-5		0950	
3	MW-3-8.5		1000	
4	MW-4-6		1120	
5	MW-4-7.5		1140	
6	MW-3-5.5 (2)		1340	
7	MW-3-8 (2)		1350	
8	MW-3-11 (2)		1400	
9	MW-3-15.5 (2)	↓	1405	↓

Analysis Request

HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	Comments/ Instructions	Number of Containers
	X	X											1
	X	X										HOLD	1
	X	X										HOLD	1

Please Initial:
Samples Cool/Intact: yes
Appropriate containers: yes
Samples preserved: no
VOAs without headspace: —
Comments: 2.5C

Special Instructions/Comments:

Relinquished by:
Sign
Print Liping Zhang
Company SECOR
Time 1521 Date 8/14/96

Received by: SAL
Sign
Print DONNA CHANEY
Company SAL
Time 8/15/96 Date 11:30

Relinquished by: SAL
Sign
Print DONNA CHANEY
Company SAL
Time 1120 Date 8/15/96

Received by: UL
Sign
Print Lin Kane
Company SAL
Time 1:30 Date 8-15-96

Sample Receipt
Total no. of containers: 9
Chain of custody seals:
Rec'd. good condition/cold:
Conforms to record:

Client: SECOR
Client Contact: Don Moore
Client Phone: (415)882-1548

Date: 8/16/96 Page 1 of 1

Superior Analytical Laboratory

SECOR
90 NEW MONTGOMERY ST. #620
SAN FRANCISCO, CA 94105

Date: August 29, 1996

Attn: Donald Moore

Laboratory Number : 21801

Project Number/Name : 50090-009-03 TASK
Facility/Site : SFFB JULIE AM WAY
OAKLAND, CA

Dear Donald Moore:

Attached is Superior Analytical Laboratory report for the samples received on August 23, 1996. This report has been reviewed and approved for release. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after September 22, 1996, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Superior
Analytical Laboratory

CASE NARRATIVE

SECOR
Project Number/Name: 50090-009-03 TASK#002
Laboratory Number: 21801

Sample Receipt

One water sample was received by
Superior Analytical Laboratory on August 23, 1996.

Cooler temperature was 4.6°C

No abnormalities were noted with sample recieving.

Sample Analysis

The sample was analysed for methods 6010 and 8015M.

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior
Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK#002
Reported on August 26, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Chronology

Laboratory Number 21801

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-3	08/22/96	08/23/96	08/23/96	08/25/96	CH233.02	01

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CH233.02-01	Method Blank	MB	Water	08/23/96	08/24/96
CH233.02-02	Laboratory Spike	LS	Water	08/23/96	08/24/96
CH233.02-03	Laboratory Spike Duplicate	LSD	Water	08/23/96	08/24/96

Superior
Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK#002
Reported on August 26, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21801-01	MW-3	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21801-01 Conc.	RL
	ug/L	
Diesel:	730W	50
Motor Oil	640	500
>> Surrogate Recoveries (%) <<		
Tetracosane	107	

Superior
Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21801
Method Blank(s)

	CH233.02-01 Conc. ug/L	RL
Diesel:	ND	50
Motor Oil	ND	500
>> Surrogate Recoveries (%) <<		
Tetracosane	132	

Superior
Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21801

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
CH233.02 02 / 03 - Laboratory Control Spikes						
Diesel:		1000	890/1020	89/102	50-150	14
>> Surrogate Recoveries (%) <<						
Tetracosane				122/123	50-150	

W - The pattern of the chromatogram resembles a weathered, aged, or degraded petroleum hydrocarbon.

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK#002
Reported on August 27, 1996

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

Chronology

Laboratory Number 21801

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-3	08/22/96	08/23/96	08/26/96	08/27/96	CH261.44	01

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CH261.44-01	Method Blank	MB	Water	08/26/96	08/26/96
CH261.44-02	Laboratory Spike	LS	Water	08/26/96	08/26/96
CH261.44-03	Laboratory Spike Duplicate	LSD	Water	08/26/96	08/26/96
CH261.44-04	96-606-01 MW-1	MS 21800-01	Water	08/26/96	08/26/96
CH261.44-05	96-606-01 MW-1	MSD 21800-01	Water	08/26/96	08/26/96

Superior
Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK#002
Reported on August 27, 1996

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21801-01	MW-3	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21801-01 Conc. RL mg/L	
Lead (SW-846 6010)	ND	0.05

Superior
Analytical Laboratory

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

Quality Assurance and Control Data

Laboratory Number: 21801
Method Blank(s)

	CH261.44-01 Conc. PPM	RL
Lead (SW-846 6010)	ND	0.05

Superior Analytical Laboratory

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

Quality Assurance and Control Data

Laboratory Number: 21801

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (mg/L) CH261.44 02 / 03 - Laboratory Control Spikes						
Lead (SW-846 6010)		1	0.947/0.956	95/96	75-125	1
For Water Matrix (mg/L) CH261.44 04 / 05 - Sample Spiked: 21800 - 01						
Lead (SW-846 6010)	ND	1	0.918/0.922	92/92	75-125	0

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Chain-of-Custody Number: 21801

SEACOR Chain-of-Custody Record

Field Office: San Francisco
Address: 90 New Montgomery St. #620
San Francisco, CA 94105

☐ Additional documents are attached, and are a part of this Record.

Job Name: SFFB Julie Ann Way
Location: Oakland, CA

Project # 1009c-009-03 Task # 002
Project Manager Don Moore
Laboratory Superior
Turnaround Time Standard

Sampler's Name Liping Zhang
Sampler's Signature [signature]

Analysis Request

Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TRPH/WTPH-D & TPHmo 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	Soluble Lead		Comments/ Instructions	Number of Containers
MW-3	8/22	1100	Water			X										X			2

Please Initial: [initials]
Samples Stored in ice: 4.6°C
Appropriate containers: [initials]
Samples preserved: [initials]
VOA's without headspace: [initials]
Comments:

Special Instructions/Comments:

Relinquished by:
Sign [signature]
Print Liping Zhang
Company SECOR
Time 1250 Date 8/23/96

Received by:
Sign [signature]
Print Dennis Eckery
Company ORC
Time 13:53 Date 8/23/96

Sample Receipt
Total no. of containers: 2
Chain of custody seals:
Rec'd. good condition/cold:
Conforms to record:

Relinquished by: Jay Coulter
Sign [signature]
Print Dennis Eckery
Company SAL
Time 3:40 Date 8/23/96

Received by: SAL
Sign [signature]
Print ERM
Company
Time 3:40 Date 8/23/96

Client: SECOR
Client Contact: Don Moore
Client Phone: (415) 882-1548

SEACOR CUSTREC Rev. 12/93

Date: 8/22/96 Page 1 of 1

Superior
Analytical Laboratory

SECOR
90 NEW MONTGOMERY ST. #620
SAN FRANCISCO, CA 94105

Date: August 26, 1996

Attn: Donald Moore

Laboratory Number : 21753

Project Number/Name : 50090-009-03 TASK 002
Facility/Site : SFFB JULIE ANN WAY, OAKLAND

Dear Donald Moore:

Attached is Superior Analytical Laboratory report for the samples received on August 16, 1996. This report has been reviewed and approved for release. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after September 15, 1996, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Superior
Analytical Laboratory

CASE NARRATIVE

SECOR
Project Number/Name: 50090-009-03 TASK 002
Laboratory Number: 21753

Sample Receipt

Four water samples were received by
Superior Analytical Laboratory on August 16, 1996.

Cooler temperature was 3.1°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analysed for methods 6010, 8015M, 8020 and 8270.

TPH/REGULAR

- The surrogate recovery was high due to the presence of interfering compounds in the sample.

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 19, 1996

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

Chronology

Laboratory Number 21753

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-1	08/16/96	08/16/96	08/19/96	08/19/96	CH191.44	01
MW-2	08/16/96	08/16/96	08/19/96	08/19/96	CH191.44	02
MW-4	08/16/96	08/16/96	08/19/96	08/19/96	CH191.44	04

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CH191.44-01	Method Blank	MB	Water	08/19/96	08/19/96
CH191.44-02	Laboratory Spike	LS	Water	08/19/96	08/19/96
CH191.44-03	Laboratory Spike Duplicate	LSD	Water	08/19/96	08/19/96
CH191.44-04	MW-1	MS 21753-01	Water	08/19/96	08/19/96
CH191.44-05	MW-1	MSD 21753-01	Water	08/19/96	08/19/96

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 19, 1996

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21753-01	MW-1	Water	1.0	-
21753-02	MW-2	Water	1.0	-
21753-04	MW-4	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21753-01 Conc. mg/L	RL	21753-02 Conc. mg/L	RL	21753-04 Conc. mg/L	RL
Lead (SW-846 6010)	ND	0.05	ND	0.05	ND	0.05

Superior Analytical Laboratory

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

Quality Assurance and Control Data

Laboratory Number: 21753
Method Blank(s)

	CH191.44-01 Conc. mg/L	RL
Lead (SW-846 6010)	ND	0.05

Superior Analytical Laboratory

EPA SW-846 Method 6010 and/or 7000 Series Dissolved Metals

Quality Assurance and Control Data

Laboratory Number: 21753

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (mg/L) CH191.44 02 / 03 - Laboratory Control Spikes						
Lead (SW-846 6010)		1	0.974/0.976	97/98	75-125	1
For Water Matrix (mg/L) CH191.44 04 / 05 - Sample Spiked: 21753 - 01						
Lead (SW-846 6010)	ND	1	0.927/0.923	93/92	75-125	1

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior
Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 26, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Chronology

Laboratory Number 21753

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-1	08/16/96	08/16/96	08/20/96	08/21/96	CH202.02	01
MW-2	08/16/96	08/16/96	08/20/96	08/21/96	CH202.02	02
MW-4	08/16/96	08/16/96	08/20/96	08/21/96	CH202.02	04

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CH202.02-01	Method Blank	MB	Water	08/20/96	08/21/96
CH202.02-02	Laboratory Spike	LS	Water	08/20/96	08/21/96
CH202.02-03	Laboratory Spike Duplicate	LSD	Water	08/20/96	08/21/96

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 26, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21753-01	MW-1	Water	10.0	-
21753-02	MW-2	Water	1.0	-
21753-04	MW-4	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21753-01 Conc. ug/L	21753-01 RL	21753-02 Conc. ug/L	21753-02 RL	21753-04 Conc. ug/L	21753-04 RL
Diesel:	5400**	500	3000**	50	2800**	50
Motor Oil	4000	500	1800	500	3000	500
>> Surrogate Recoveries (%) <<						
Tetracosane	155I		93		97	

Superior
Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21753
Method Blank(s)

	CH202.02-01 Conc. ug/L	 RL
Diesel:	ND	50
Motor Oil	ND	500
>> Surrogate Recoveries (%) <<		
Tetracosane	99	

Superior
Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21753

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
CH202.02 02 / 03 - Laboratory Control Spikes						
Diesel:		1000	1300/1200	130/120	50-150	8
>> Surrogate Recoveries (%) <<						
Tetracosane				102/100	50-150	

** - Lighter and heavier hydrocarbons were found in the range of diesel, but do not resemble a diesel fingerprint. Possible gasoline and motor oil.
I - The surrogate recovery was high due to the presence of interfering compounds in the sample.

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior Analytical Laboratory

SECOR
Attn: Donald Mocre

Project 50090-009-03 TASK 002
Reported on August 26, 1996

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

Chronology

Laboratory Number 21753

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-1	08/16/96	08/16/96	08/23/96	08/26/96	CH231.24	01

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CH231.24-03	Method Blank	MB	Water	08/23/96	08/26/96
CH231.24-04	Laboratory Spike	LS	Water	08/23/96	08/26/96
CH231.24-05	Laboratory Spike Duplicate	LSD	Water	08/23/96	08/26/96

Superior
Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 26, 1996

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21753-01	MW-1	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21753-01 Conc. ug/L	RL
bis(2-chloroethyl)ether	ND	10
aniline	ND	50
phenol	ND	10
2-chlorophenol	ND	10
1,3-dichlorobenzene	ND	10
1,4-dichlorobenzene	ND	10
1,2-dichlorobenzene	ND	10
benzyl alcohol	ND	10
bis-(2-chloroisopropyl)ether	ND	10
2-methylphenol	ND	10
hexachloroethane	ND	10
n-nitroso-di-n-propylamine	ND	10
4-methylphenol	ND	10
nitrobenzene	ND	10
isophorone	ND	10
2-nitrophenol	ND	10
2,4-dimethylphenol	ND	10
bis(2-chloroethoxy)methane	ND	10
2,4-dichlorophenol	ND	10
1,2,4-trichlorobenzene	ND	10
naphthalene	260	100
benzoic acid	ND	50
4-chloroaniline	ND	10
hexachlorobutadiene	ND	10
4-chloro-3-methylphenol	ND	10
2-methyl-naphthalene	93	10
hexaclorocyclopentadiene	ND	30
2,4,6-trichlorophenol	ND	10
2,4,5-trichlorophenol	ND	10
2-chloronaphthalene	ND	10
2-nitroaniline	ND	10

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 26, 1996

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21753-01	MW-1	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21753-01 Conc. ug/L	RL
acenaphthylene	ND	10
dimethylphthlate	ND	10
2,6-dinitrotoluene	ND	10
Acenaphthene	ND	10
3-nitroaniline	ND	10
2,4-dinitrophenol	ND	50
dibenzofuran	ND	10
2,4-dinitrotoluene	ND	10
4-nitrophenol	ND	10
fluorene	ND	10
4-chlorophenyl-phenylether	ND	10
diethylphthlate	ND	10
4-nitroaniline	ND	10
4,6-dinitro-2-methylphenol	ND	50
n-nitrosodiphenylamine	ND	10
4-bromo-phenyl-phenylether	ND	10
hexachlorobenzene	ND	10
pentachlorophenol	ND	50
phenanthrene	ND	10
anthracene	ND	10
di-n-butylphthlate	ND	10
fluoranthene	ND	10
benzidine	ND	50
pyrene	ND	10
butylbenzylphthlate	ND	10
3.3'-dichlorobenzidine	ND	50
Benzo(a)Anthracene	ND	10
chrysene	ND	10
bis(2-ethylhexyl)phthalate	ND	10
di-n-octylphthalate	ND	10
benzo(b,k)fluoranthene	ND	10

Superior Analytical Laboratory

SECOR
Attn: Donald Moore

Project 50090-009-03 TASK 002
Reported on August 26, 1996

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21753-01	MW-1	Water	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21753-01 Conc. ug/L	RL
9H-Carbazole	ND	10
Benzo(a)Pyrene	ND	10
Indeno(1,2,3)Pyrene	ND	10
dibenzo[a,h]anthracene	ND	10
Benzo(g,h,i)Perylene	ND	10
>> Surrogate Recoveries (%) <<		
2-fluorophenol	64	
phenol-d5	67	
nitrobenzene-d5	53	
2-fluorobiphenyl	76	
2,4,6-tribromophenol	84	
terphenyl-d14	82	

Superior Analytical Laboratory

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

Quality Assurance and Control Data

Laboratory Number: 21753
Method Blank(s)

	CH231.24-03 Conc. ug/L	RL
bis(2-chloroethyl)ether	ND	10
aniline	ND	50
phenol	ND	10
2-chlorophenol	ND	10
1,3-dichlorobenzene	ND	10
1,4-dichlorobenzene	ND	10
1,2-dichlorobenzene	ND	10
benzyl alcohol	ND	10
bis-(2-chloroisopropyl)ether	ND	10
2-methylphenol	ND	10
hexachloroethane	ND	10
n-nitroso-di-n-propylamine	ND	10
4-methylphenol	ND	10
nitrobenzene	ND	10
isophorone	ND	10
2-nitrophenol	ND	10
2,4-dimethylphenol	ND	10
bis(2-chloroethoxy)methane	ND	10
2,4-dichlorophenol	ND	10
1,2,4-trichlorobenzene	ND	10
naphthalene	ND	10
benzoic acid	ND	50
4-chloroaniline	ND	10
hexachlorobutadiene	ND	10
4-chloro-3-methylphenol	ND	10
2-methyl-naphthalene	ND	10
hexaclorocyclopentadiene	ND	30
2,4,6-trichlorophenol	ND	10
2,4,5-trichlorophenol	ND	10
2-chloronaphthalene	ND	10
2-nitroaniline	ND	10
acenaphthylene	ND	10
dimethylphthlate	ND	10
2,6-dinitrotoluene	ND	10
Acenaphthene	ND	10
3-nitroaniline	ND	10
2,4-dinitrophenol	ND	50

Superior Analytical Laboratory

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

Quality Assurance and Control Data

Laboratory Number: 21753
Method Blank(s)

	CH231.24-03 Conc. ug/L	RL
dibenzofuran	ND	10
2,4-dinitrotoluene	ND	10
4-nitrophenol	ND	10
fluorene	ND	10
4-chlorophenyl-phenylether	ND	10
diethylphthlate	ND	10
4-nitroaniline	ND	10
4,6-dinitro-2-methylphenol	ND	50
n-nitrosodiphenylamine	ND	10
4-bromo-phenyl-phenylether	ND	10
hexachlorobenzene	ND	10
pentachlorophenol	ND	50
phenanthrene	ND	10
anthracene	ND	10
di-n-butylphthlate	ND	10
fluoranthene	ND	10
benzidine	ND	50
pyrene	ND	10
butylbenzylphthlate	ND	10
3.3'-dichlorobenzidine	ND	50
Benzo(a)Anthracene	ND	10
chrysene	ND	10
bis(2-ethylhexyl)phthalate	ND	10
di-n-octylphthalate	ND	10
benzo(b,k)fluoranthene	ND	10
9H-Carbazole	ND	10
Benzo(a)Pyrene	ND	10
Indeno(1,2,3)Pyrene	ND	10
dibenzo[a,h]anthracene	ND	10
Benzo(g,h,i)Perylene	ND	10
>> Surrogate Recoveries (%) <<		
2-fluorophenol	66	
phenol-d5	54	
nitrobenzene-d5	73	
2-fluorobiphenyl	74	
2,4,6-tribromophenol	68	

Superior Analytical Laboratory

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

Quality Assurance and Control Data

Laboratory Number: 21753
Method Blank(s)

	CH231.24-03
	Conc. RL
	ug/L
terphenyl-d14	74

Superior Analytical Laboratory

EPA SW-846 Method 8270 Semivolatile Organics by GC/MS

Quality Assurance and Control Data

Laboratory Number: 21753

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L) CH231.24 04 / 05 - Laboratory Control Spikes						
phenol		100	54.7/56.1	55/56	12-110	2
2-chlorophenol		100	68.7/75.7	69/76	27-123	10
1,4-dichlorobenzene		50	30.1/35.8	60/72	36-97	18
n-nitroso-di-n-propylamine		50	33.5/36.9	67/74	41-116	10
1,2,4-trichlorobenzene		50	32.9/37.8	66/76	39-98	14
4-chloro-3-methylphenol		100	71.0/76.1	71/76	23-97	7
Acenaphthene		50	30.4/31.6	61/63	46-118	3
2,4-dinitrotoluene		50	31.1/31.9	62/64	24-104	3
4-nitrophenol		100	54.2/58.4	54/58	10-80	7
pentachlorophenol		100	78.2/83.7	78/84	9-103	7
pyrene		50	34.3/37.0	69/74	26-127	7
>> Surrogate Recoveries (%) <<						
2-fluorophenol				63/70	21-110	
phenol-d5				62/61	10-110	
nitrobenzene-d5				69/79	35-114	
2-fluorobiphenyl				70/74	43-116	
2,4,6-tribromophenol				77/74	10-123	
terphenyl-d14				72/75	33-141	

Definitions:
ND = Not Detected
RL = Reporting Limit
NA = Not Analysed
RPD = Relative Percent Difference
ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

Superior Analytical Laboratory

CH2M HILL
Attn: MARK FATOR

Project
Reported on August 28, 1996

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Chronology

Laboratory Number 21806

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
UK1-0826-15'-001	08/26/96	08/26/96	08/27/96	08/27/96	CH271.37	01
UK1-0826-STPL-002	08/26/96	08/26/96	08/28/96	08/28/96	CH271.37	02
UK1-0826-STPL-003	08/26/96	08/26/96	08/28/96	08/28/96	CH271.37	03

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CH271.37-02	Laboratory Spike	LS	Soil	08/27/96	08/27/96
CH271.37-06	S-1	MS 21789-01	Soil	08/27/96	08/27/96
CH271.37-07	S-1	MSD 21789-01	Soil	08/27/96	08/27/96
CH271.37-01	Method Blank	MB	Soil	08/27/96	08/27/96

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CH2M HILL
Attn: MARK FATOR

Project
Reported on August 28, 1996

Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
21806-01	UK1-0826-15'-001	Soil	1.0	-
21806-02	UK1-0826-STPL-002	Soil	1.0	-
21806-03	UK1-0826-STPL-003	Soil	1.0	-

R E S U L T S O F A N A L Y S I S

Compound	21806-01 Conc. mg/kg	RL	21806-02 Conc. mg/kg	RL	21806-03 Conc. mg/kg	RL
Benzene	ND	0.005	ND	0.005	ND	0.005
Toluene	ND	0.005	ND	0.005	ND	0.005
Ethyl Benzene	ND	0.005	ND	0.005	ND	0.005
Xylenes	ND	0.005	ND	0.005	ND	0.005
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)	103		95		98	

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Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 21806
Method Blank(s)

	CH271.37-01 Conc.	RL mg/kg
Benzene	ND	0.005
Toluene	ND	0.005
Ethyl Benzene	ND	0.005
Xylenes	ND	0.005
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	105	

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Volatile Aromatic Hydrocarbons by EPA SW-846 Method 5030/8020

Quality Assurance and Control Data

Laboratory Number: 21806

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Soil Matrix (mg/kg) CH271.37 02 / - Laboratory Control Spikes						
Benzene		0.100	0.12	120	65-125	
Toluene		0.100	0.097	97	65-125	
Ethyl Benzene		0.100	0.10	100	65-125	
Xylenes		0.300	0.29	97	65-125	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				107	50-150	
For Soil Matrix (mg/kg) CH271.37 06 / 07 - Sample Spiked: 21789 - 01						
Benzene	ND	0.100	0.081/0.077	81/77	65-125	5
Toluene	ND	0.100	0.084/0.079	84/79	65-125	6
Ethyl Benzene	ND	0.100	0.080/0.074	80/74	65-125	8
Xylenes	ND	0.300	0.24/0.23	80/77	65-125	4
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				89/87	50-150	

Definitions:
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ug/L = parts per billion (ppb)
mg/L = parts per million (ppm)
ug/kg = parts per billion (ppb)
mg/kg = parts per million (ppm)

21753

Chain-of-Custody Number:

SEACOR Chain-of-Custody Record

Field Office: San Francisco
Address: 90 New Montgomery St. #620
San Francisco, CA 94105

☐ Additional documents are attached, and are a part of this Record.

Job Name: SFFR Julie Ann Way
Location: Oakland, CA

Project # 30090-009-03 Task # 002
Project Manager Don Moore
Laboratory Superior
Turnaround Time Standard

Sampler's Name Liping Zhang
Sampler's Signature

	Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D + TPHmo 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	Soluble Lead		Comments/ Instructions	Number of Containers
*	MW-1	8/16	1250	Water		X	X					X					X			7
*	MW-2		1050			X	X					X					X			7
	MW-3		1215			X	X													4
*	MW-4	↓	1150	↓		X	X					X					X			7

Please Initial:
Samples Stored in ice. yes
Appropriate containers yes
Samples preserved yes
VOA's without headspace
Comments: 3 1/2

Special Instructions/Comments:
* Hold samples for EPA 8270 analysis. Please contact project manager for further instruction.

Relinquished by:
Sign
Print Liping Zhang
Company SECOR
Time 1331 Date 8/16/96

Received by:
Sign
Print
Company SAL
Time 2:46 Date 8/16/96

Relinquished by:
Sign
Print
Company SAL
Time 3:40 P.M. Date 8/16/96

Received by:
Sign Lia Kane
Print Lia Kane
Company SAL
Time 4 pm Date 8/16/96

Sample Receipt
Total no. of containers: 25
Chain of custody seals:
Rec'd. good condition/cold:
Conforms to record:

Client: SECOR
Client Contact: Don Moore
Client Phone: (415) 882-1548

SEACOR CUSTREC Rev. 12/93

Date: 8/16/96 Page 1 of 1