BASELINE

ENVIRONMENTAL CONSULTING

28 October 1991
S9-105

Mr. Francis Collins
6050 Hollis Street
Emeryville, CA 94608

Subject: **Documentation of Well Installation, Soil Sampling, and Groundwater Sampling at 6050 Hollis Street, Emeryville, California**

Dear Mr. Collins:

This letter documents the installation of two additional groundwater monitoring wells, soil sampling, and groundwater sampling performed by BASELINE at 6050 Hollis Street, Emeryville, California (Figure 1). The scope of work was submitted to the Alameda County Hazardous Materials Department on 28 June 1991 for their review and approval.

Well Installation and Soil Sampling

Wells MW-H2 and MW-H3 were installed on 29 August 1991. A permit to excavate in the street was obtained from the City of Emeryville for MW-H3 because the well was placed in a street right-of-way (Attachment A). The wells were drilled by Aqua Science Engineers under the direction of a BASELINE geologist. Eight-inch boreholes were advanced using steam cleaned hollow-stem augers. Detailed logs were recorded by the geologist as the boreholes were drilled. Two-inch diameter PVC solid casings and 0.01-inch slotted casings were placed inside the augers in the boreholes. Fine sand was tremied into the annular spaces between the boreholes and the casings through the hollow-stem augers. The top two to three and a half foot sections of the annular spaces were sealed with bentonite and cement. The well heads were sealed with locking water-tight caps and protected in Christy boxes. On 5 September 1991, the wells were developed using a double diaphragm pump and new PVC hoses. The drill cuttings and decontamination water were stored in labeled 55-gallon drums and stored on-site. The wells were surveyed to determine groundwater flow direction. The surveyor report is in Attachment B. Well construction summaries, well development logs, and detailed drilling logs are provided in Attachment C.

One soil sample was collected from the unsaturated zone in each borehole from about six feet below the ground surface. The soil samples were collected using a modified California sampler fitted with three 6-inch brass tubes. The sampler was driven in advance of the augers. The brass tubes containing the samples were capped, labeled, sealed in zip-lock bags, and placed in a cooler with blue ice. The samples were submitted to Curtis and Tompkins, Ltd., a certified laboratory, using chain-of-custody procedures. The samples were analyzed

for total petroleum hydrocarbon (TPH) as diesel, as kerosene, and as gasoline; and benzene, toluene, ethylbenzene, and xylenes (BTEX). The sampler was decontaminated between samples by washing with TSP and water, and rinsed with deionized water. The decontamination water was stored in 55-gallon drums.

Groundwater Sampling

Monitoring wells MW-H1 through MW-H3 were sampled on 11 September 1991. A dual interface probe was used to check the wells for floating product and to measure the water levels. The probe was decontaminated between wells by washing with TSP and water, and rinsing with deionized water. The decontamination water was transfered to 55-gallon drums. A minimum of five well volumes were purged from each well and stored in 55-gallon drums. The parameters pH, temperature, and electrical conductivity were measured in the purged water and these parameters had stabilized during purging. The water levels were again measured prior to sample collection to ensure that the wells had recharged sufficiently. The groundwater samples were collected using PVC disposable bailers. The portion of the samples that was to be analyzed for TPH as gasoline and BTEX was decanted into VOA vials from the bottom of the bailers using volatile organic compound (VOC) attachments to minimize turbulence and volatilization. The filled vials were checked to ensure that bubbles were not trapped in the bottles. The portion of the samples that was to be analyzed for TPH as diesel and as kerosene was decanted in amber glass bottles without the VOC attachments. The sample bottles were labeled, placed in a cooler with blue ice, and transported to the laboratory using chain-of-custody procedures. The groundwater sampling forms are included in Attachment D

Analytical Results

Analytical results for the soil samples are summarized in Table 1. The sample from well MW-H3 contained TPH as diesel at 800 mg/kg. None of the other constituents analyzed for either samples was found above laboratory detection limits. The laboratory report for the soil samples are contained in Attachment E.

Analytical results for the groundwater samples for the most recent and previous sampling events are summarized in Table 2. TPH as gasoline, TPH as diesel, and BTEX were identified above laboratory detection limits in the MW-H1 sample. None of the analyzed constituents were identified in the MW-H2 sample and only TPH as diesel was found above detection limits in the MW-H3 sample. The laboratory report for the most recent groundwater samples is in Attachment D.

Groundwater Flow Direction and Gradient

Water levels were measured in the three wells on 11 and 24 September 1991. The measurements are summarized in Table 3. The groundwater flow direction is towards the southwest, S30W and S13W with gradient magnitudes of 0.0068 and 0.0099, respectively. The flow directions are shown in Figure 1.

Copies of this letter and attachments should be submitted to the Alameda County Environmental Health Department and the San Francisco Bay Regional Water Quality Control Board. Please contact us if you have any questions or should need additional assistance.

Sincerely,

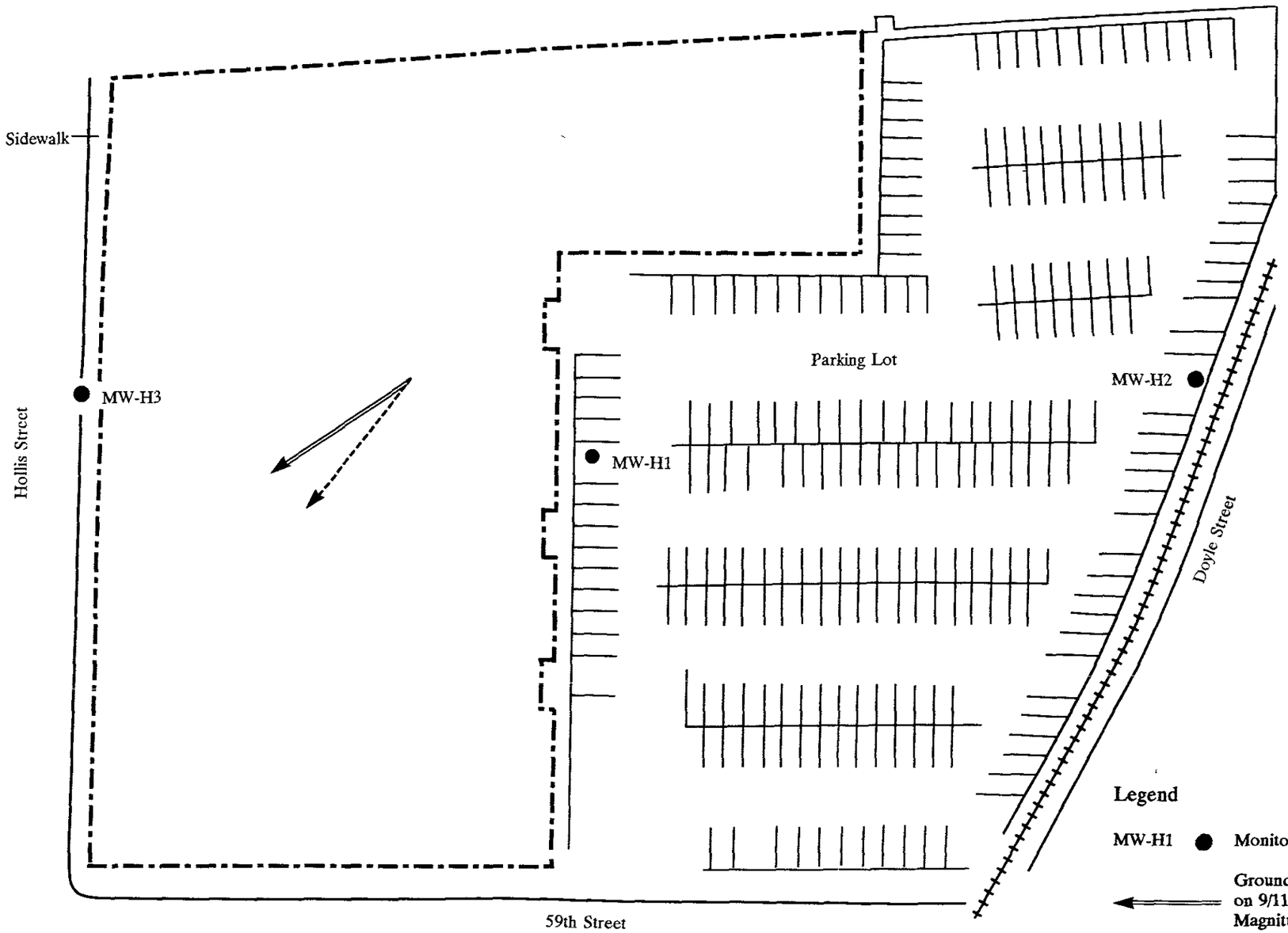
Yane Nordhav
Principal
Reg. Geologist No. 4009

Lydia Huang
Professional Engineer
No. 43995

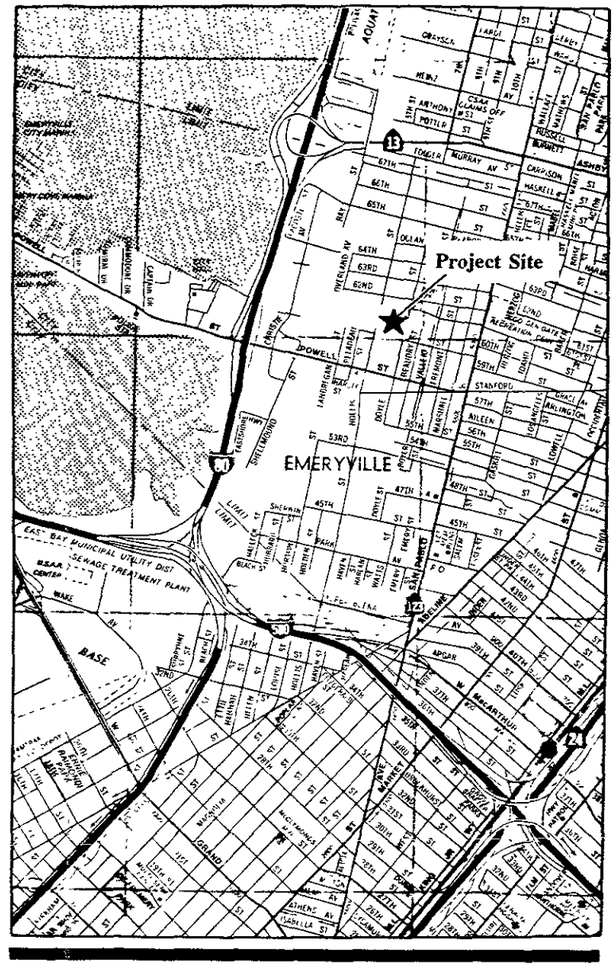
YN:LH:ic
Attachments

SITE PLAN
6050 Hollis Street
Emeryville, California

Figure 1



Regional Location



Legend

MW-H1 ● Monitoring Well

Groundwater Flow Direction on 9/11/91 with Gradient Magnitude of 0.0068.

Groundwater Flow Direction on 9/24/91 with Gradient Magnitude of 0.0099.

Railroad Track

Approximate
0 50 Feet

BASELINE

TABLE 1

ANALYTICAL RESULTS, SOILS
6050 Hollis Street, Emeryville

(mg/kg)

Well	Date	Sample Depth	TPH as Diesel[1]	TPH as Kerosene[1]	TPH as Gasoline[1]	Benzene[2]	Toluene[2]	Ethyl-benzene[2]	Xylenes[2]
MW-H2	08/29/91	6.0-6.5	<1.0	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
MW-H3	08/29/91	6.0-6.5	**800**	<10	<1.0	<0.005	<0.005	<0.005	<0.005

[1] Analyzed in accordance with the DHS LUFT Manual.
[2] Extracted by EPA Method 5030 and analyzed by EPA Method 8020.

Notes: Number(s) shown in bold are concentrations identified above detection limit(s).
Well locations are shown in Figure 1.
Well logs are in Attachment C.
Laboratory report is in Appendix E.
Bolded numbers indicate concentrations above the levels of detection.

TABLE 2

SUMMARY OF ANALYTICAL RESULTS, GROUNDWATER
6050 Hollis Street, Emeryville

(mg/L)

Well	Date	TPH as Gasoline[1]	TPH as Diesel[2]	TPH as Kerosene[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Xylenes[3]
MW-H1	02/10/89	<0.05	<0.5	<0.5	<0.001	<0.001	<0.001	<0.001
	05/01/89	<0.05	<0.5	<0.5	<0.001	<0.001	<0.001	<0.001
	09/13/89	**1.3**	<0.5	<0.5	**0.061**	<0.0005	**0.005**	**0.002**
	12/04/89	**0.41/0.37**	<0.5/<0.5	<0.5/<0.5	**0.0072/0.011**	**0.0032/0.0024**	**0.0028/0.0014**	**0.0032/0.0013**
	03/26/90	**0.7**	<0.5	<0.5	**0.093**	**0.001**	**0.0017**	<0.001
	06/14/90[4]	**0.34**[4]	**0.082**[4]	<0.05[4]	**0.016**[4]	<0.001[4]	<0.001[4]	<0.001[4]
	07/24/90	**0.14**	<0.5	<0.5	**0.006**	<0.0005	<0.0005	**0.0009**
	11/16/90	**1.1**	**0.55**	<0.05	**0.016**	**0.0009**	**0.0018**	**0.0015**
	03/15/91	**0.98/1.0**	<0.05/<0.05	<0.05/<0.05	**0.02/0.017**	**0.0006**/<0.0005	**0.0022/0.0019**	**0.0025/0.0022**
	09/11/91	**1.0**	**0.39**	<0.05	**0.015**	**0.0056**	**0.0027**	**0.0029**
MW-H2	09/11/91	<0.05	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-H3	09/11/91	<0.05/<0.05	**0.12/0.22**	<0.05/<0.05	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005	<0.0005/<0.0005
Field blanks	06/14/90[4]	<0.05	**0.062**[4]	<0.05	<0.001	<0.001	<0.001	<0.001
	07/24/90	<0.05	<0.5	<0.5	<0.0005	<0.0005	<0.0005	<0.0005
	11/16/90	<0.05	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

1 Analyzed by EPA Methods 5030/8015 Modified (some of the laboratory reports cite the California DHS Luft Manual).
2 Analyzed by EPA Methods 3510 or 3550/8015 Modified (some of the laboratory reports cite the California DHS Luft Manual).
3 Analyzed by EPA Methods 5030/8020.
4 The field blank for 6/14/90 sampling contained diesel at 0.062 mg/L, therefore all analytical results for MW-H1 for that date may be erroneous.

Notes: Number(s) shown in bold are concentrations identified above detection limit(s).
Well locations are shown in Figure 1
Groundwater sampling forms and analytical results for the most recent sampling are in Attachment D.
xx/xx indicates duplicate samples

TABLE 3

GROUNDWATER LEVEL MEASUREMENTS
6050 Hollis Street, Emeryville

Well	Date	Depth to Water from TOC (feet)	Elevation of TOC (feet msl)	Groundwater Elevation (feet msl)
MW-H1	02/08/89	4.85	18.90	14.05
	05/01/89	5.10		13.80
	09/13/89	5.80		13.10
	12/04/89	5.34		13.56
	03/26/90	6.42		12.48
	07/24/90	5.93		12.97
	11/16/90	5.80		13.10
	03/15/91	4.30		14.60
	09/11/91	5.71		13.19
	09/24/91	5.80		13.10
MW-H2	09/11/91	6.84	21.48	14.64
	09/24/91	6.86		14.62
MW-H3	09/11/91	4.84	16.95	12.11
	09/24/91	4.81		12.14

Notes: msl = mean sea level.
Well locations and groundwater flow directions are shown in Figure 1.

ATTACHMENT A

CITY OF EMERYVILLE STREET EXCAVATION PERMIT

PERMIT TO EXCAVATE IN CITY STREETS

DEPARTMENT OF PUBLIC WORKS
CITY OF EMERYVILLE

12TH FLOOR
2200 POWELL ST., EMERYVILLE, CA 94608

(9-87 THIS SUPERCEDES ALL PREVIOUS FORMS)

NO. 91-8-9

DATE 8/6/91

COMPANY Baseline Environmental

ADDRESS 5900 Hollis St. Suite 'D' PHONE 420-8686

LOCATION OF WORK 5900 Hollis St. Sidewalk and parking buffer (east side

PLANNED DATE OF COMMENCEMENT August 20

PLANNED DATE OF COMPLETION August 20

DESCRIPTION OF WORK Drilling groundwater monitoring well

☒ 24 HR. NOTICE PRIOR START OF WORK

☐ PLAN REQUIRED

☐ MONUMENTS TO BE REPLACED

REMARKS

NOTE: IF SUBCONTRACTOR IS TO DO WORK, PROOF OF ADEQUATE INSURANCE MUST BE PRESENTED PRIOR TO START OF WORK OR THIS PERMIT IS VOID.

Henry R. Heath
CITY ENGINEER

ATTACHMENT B

SURVEYOR REPORT

BATES AND BAILEY
LAND SURVEYORS
15 SHATTUCK SQUARE • BERKELEY, CA 94704
TELEPHONE (415) 843-2007

P.O BOX 592
BERKELEY, CA 94701-0592

September 17, 1991

Baseline Environmental Consulting
5900 Hollis St., "D"
Emeryville, CA 94608

Attention: Bill Scott

Dear Bill,

Listed below are the monitor well elevations for the property at Hollis and 59th Streets.

The elevations are based upon U.S.C. & G.S. datum. The bench mark information was furnished by the City of Emeryville Public Works Dept.

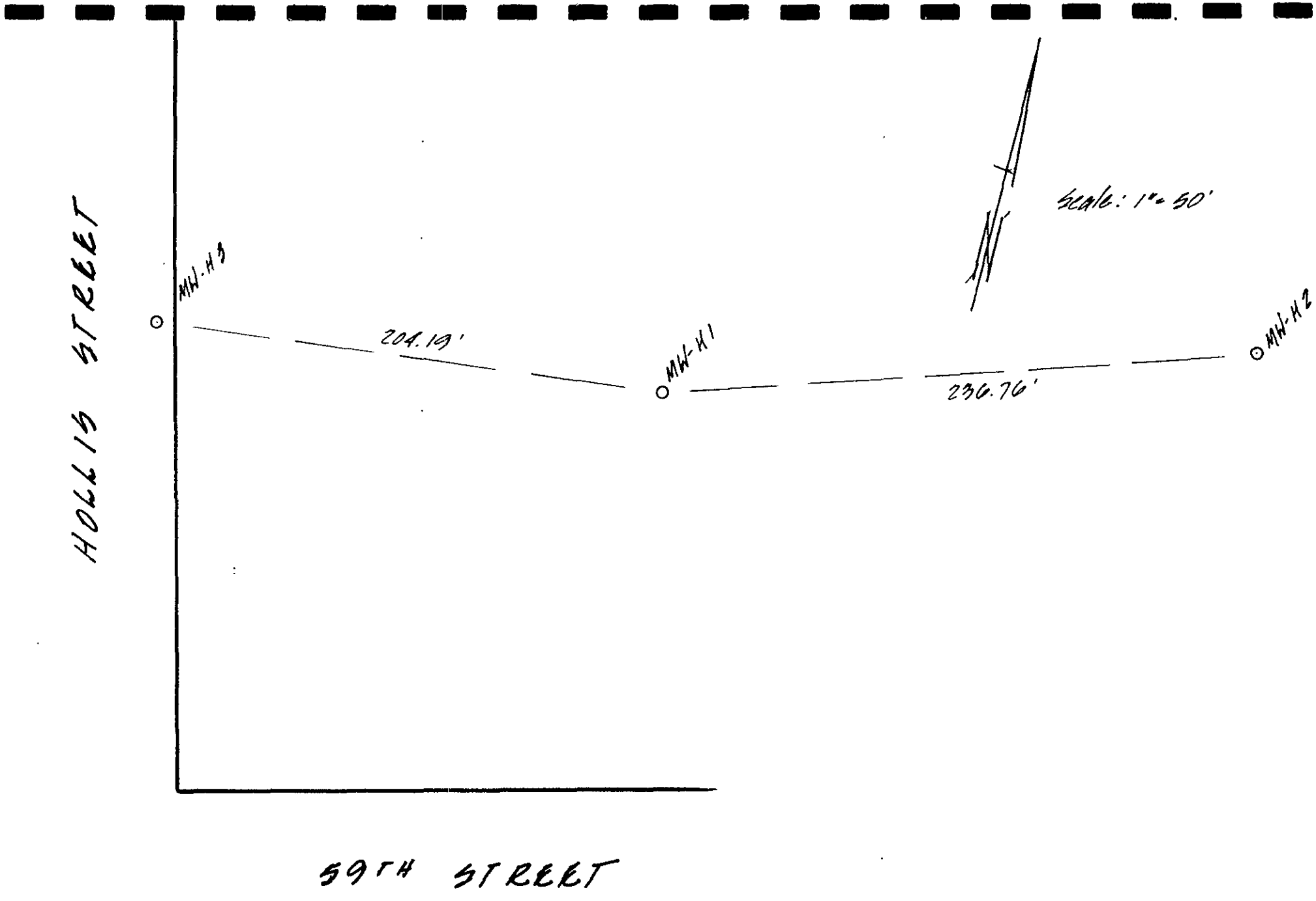
Enclosed is a sketch indicating the distance between each well.

WELL	CASING ELEVATION	GROUND ELEVATION
MW - H 1	18.90	19.10
MW - H 2	21.48	21.93
MW - H 3	16.95	17.37

Yours truly,

Robert W. Wilson

RWW/dd
Enc. - sketch


HOLLIS STREET
MW-H3
204.19'
MW-H1
230.76'
MW-H2
Scale: 1" = 50'
59TH STREET

ATTACHMENT C

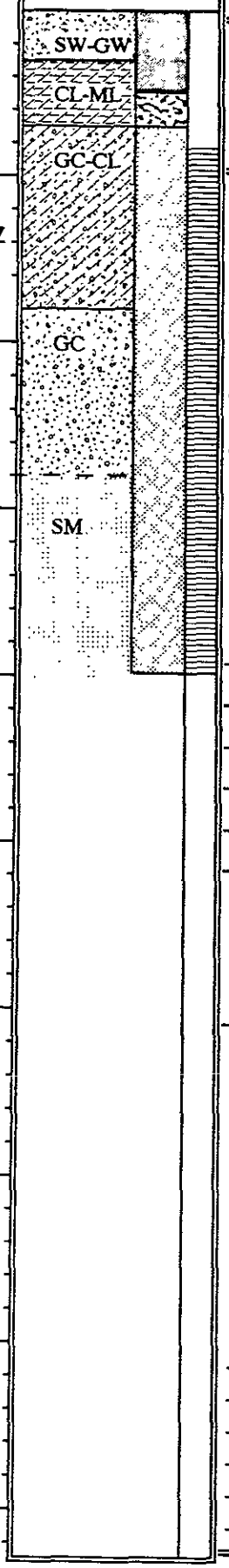
WELL CONSTRUCTION SUMMARIES, DEVELOPMENT LOGS, AND DRILLING LOGS

WELL CONSTRUCTION SUMMARY

Project No.: S9105 Well No: MW-H2

Project Name: Hollis Street Project
Location: 6050 Hollis St.
Emeryville, CA

Date: 8-29-91
Personnel: WKS
Driller: Aqua Science Engineers



DRILLING SUMMARY

Drill Rig: B-57
Auger/Bits: Hollow stem continuous flight
Drilling Fluid: None
Boring Diameter (inch): 8-inch
Boring Depth (feet): 20
Surface Completion: Morrison Christy Box
Ground Surface Elevation (feet): 21.93
TOC Elevation (feet): 21.48

WELL DESIGN

Basis: X Geologic Log ___ Geophysical Log

Casing Diameter (inch)	Material + Length (feet)	Slot Size	Interval (feet bgs)
2	PVC 4.2	Blank	0.4 - 4.5
2	PVC 10	010	4.5 - 14.5
2	PVC 5.5	010	14.5 - 20

Centralizer	None	
Filter Material	Lonestar #2/16	3.5 - 20
Bentonite		2.5 - 3.5
Cement		0 - 2.5

WATER LEVELS

	Date	Time	Depth (ft bgs)
During Drilling:	8-29-91	8:15	≈7.0
After completion:	N.A.	N.A.	N.A.
Before development:	9-5-91	12:47	6.81

COMMENTS

CONSTRUCTION TIME LOG

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling:	8-29-91	7:45	8-29-91	8:57
Geophys Logging:				
Casing:	8-29-91	9:00	8-29-91	9:05
Filter Placement:	8-29-91	9:05	8-29-91	9:59
Cementing:	8-29-91	10:15	8-29-91	10:20
Development:	9-5-91	12:48	9-5-91	14:10
Other:				

WELL DEVELOPMENT

Method: Double diaphragm pump Date: 9-5-91

Time	Gallons	Appearance
12:48	0	Very turbid
12:50	4	Very turbid
13:03	8	Very turbid
13:06	15	Very turbid
13:12	15	Slightly turbid
13:40	22	Slightly turbid
13:47	26	Slightly turbid
13:56	30	Very slightly turbid
14:10	35	Very slightly turbid - clear

BASELINE Environmental Consulting
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

Signature:

[Scale: 1 inch=5 feet]

(revised 9/6/91)

WELL DEVELOPMENT

Project No: S9105

Project Name: Hollis Street Project

Location: 6050 Hollis Street
Emeryville, CA

Recorded by: WKS

Weather Conditions: Sunny

Precip. in last 5 days (inch): None

Well No.: MW-H2 Date: 9-5-91

Depth of Well from TOC (feet): 20

Well Diameter (inch): 2-inch

Screened Interval (feet): 4.5 - 20

TOC Elevation (feet msl): 21.48

Water Level from TOC (feet): 6.81 Time: 12:47

Product Level from TOC (feet): None Time: 12:47

Water Level Measurement (feet msl): Dual interface probe

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance
12:48	0	--
12:50	4	Very turbid
13:03	8	Very turbid
13:06	15	Very turbid
Took recharge value		Very turbid
13:12	15	Slightly turbid
13:40	22	Slightly turbid
13:47	26	Slightly turbid
13:56	30	Very slightly turbid
14:10	35	Very slightly turbid - clear

Recharge:

Time	Water Level (feet)
13:08.06	15.5
13:08.40	15.0
13:09.23	14.5
13:09.59	14.0
13:10.44	13.5

Total Gallons Removed: 35

Development Method: Double diaphragm pump

Decontamination Method: TSP & DI rinse

Average Recharge Rate (foot/minute): 0.76

Purged Water Disposal: Drum # MW-HW2 & MW-HW3

Number of Drums: 2

Rinsate Disposal: Drum # MW-HW2 & MW-HW3

(9/9/91)

BASELINE
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Emeryville, CA 94608
(415) 420-8686

DRILLING LOG

Location	6050 Hollis Street	Boring No.	MW-H2
Driller	ASE	Project No.	S9105
Method	Hollow stem	Date	8-29-91
Logger	WKS Datum ____ Bore size 8-inch	Casing size	2-inch

Depth	Graphic	Lithology	Notes
0		Concrete slab	
		Yellowish brown, silty gravelly SAND - sandy GRAVEL; fine-grained, sub-angular - angular clasts 1/2 - 3/4 inch diameter, loose to loosely dense, dry-damp (fill).	
1	SW-GW		
		Black, silty CLAY - clayey SILT with some gravel, low plasticity; firm sub-rounded clasts 1/3 inch diameter damp.	Brick pieces
2	CL/ML		
3			
4	GC/CL	Brown, sandy clayey GRAVEL - gravelly CLAY. 1/3 - 1/4 inch diameter clasts. Sub-angular.	
		Angular, medium plasticity, loose, moist-very moist.	
5			8-9-9
			Increase in moisture. Some water in between gravel. 5 ppm Hnu
6			
7			8-8-9-10
8			
			17-8-9-10
9		Brown, clayey sandy GRAVEL, sub-angular sub-rounded clasts 1/3 - 3/4 inch diameter, loose.	
	GC		
10		Medium loose, some interbedding of coarse grained sandy wet.	

Scale: 1 inch = 1.5 feet

(10/23/91)

Signature _____

DRILLING LOG

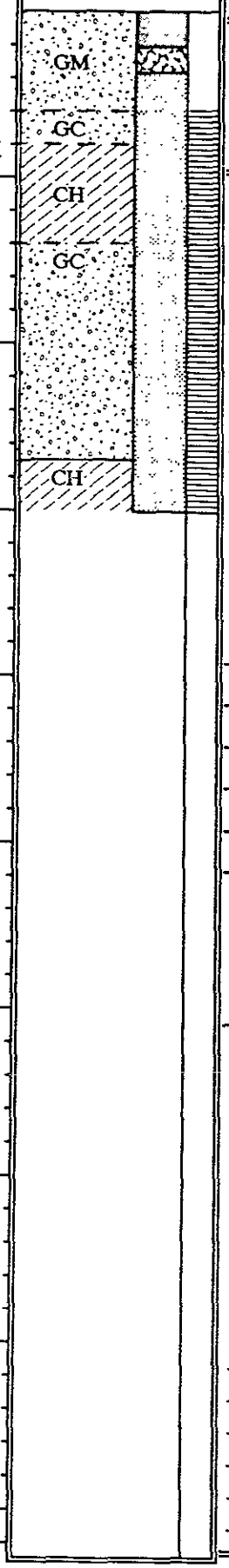
BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

Depth	Graphic	Lithology	Notes
10			
11			
12			
13			
14	SM	Pale olive - yellowish brown, silty SAND; very fine-grained - some interbedding of fine-grained sands, iron oxide stains, wet.	8-8-9
15			
16			
17			
18			
19		Some interbedding of gravelly clay - clayey gravels. 1-3 inches thich.	
20		T.D. 20.0 ft	12-24-19-23

Scale: 1 inch = 1.5 feet

(10/23/91)

Signature



WELL CONSTRUCTION SUMMARY

Project No.: S9105 Well No: MW-H3

Project Name: Hollis Street Project
Location: 6050 Hollis Street
Emeryville, CA

Date: 8-29-91
Personnel: WKS
Driller: Aqua Science Engineers

DRILLING SUMMARY

Drill Rig: B-57
Auger/Bits: Hollow stem continuous flight
Drilling Fluid: None
Boring Diameter (inch): 8
Boring Depth (feet): 15
Surface Completion: Morrison Christy Box
Ground Surface Elevation (feet): 17.37
TOC Elevation (feet): 16.95

WELL DESIGN

Basis: X Geologic Log ___ Geophysical Log

Casing Diameter (inch)	Material + Length (feet)	Slot Size	Interval (feet bgs)
2	PVC 2.7	Blank	0.4 - 3
2	PVC 10	010	3 - 13
2	PVC 2	010	13 - 15

Centralizer	None	
Filter Material	Lonstar #2/16	2-15
Bentonite		1-2
Cement		0-1

WATER LEVELS

	Date	Time	Depth (ft bgs)
During Drilling:	8-29-91	12:00	4.5
After completion:	NA	NA	NA
Before development:	9-5-91	8:10	4.71

COMMENTS

CONSTRUCTION TIME LOG

Task	Start		Finish	
	Date	Time	Date	Time
Drilling:	8-29-91	11:30	8-29-91	12:21
Geophys Logging:				
Casing:	8-29-91	12:25	8-29-91	12:27
Filter Placement:	8-29-91	12:30	8-29-91	13:10
Cementing:	8-29-91	14:10	8-29-91	14:28
Development:	9-5-91	8:10	9-5-91	10:42
Other:				

WELL DEVELOPMENT

Method: Double diaphragm pump Date: 9-5-91

Time	Gallons	Appearance
8:10	0	Very turbid
8:20	2.5	Very turbid
8:29	4.0	Very turbid
8:45	6.0	Very turbid
10:10	16.0	Slightly turbid
10:25	20.0	Very slightly turbid
10:35	22.0	Very slightly turbid - clear
10:42	27.0	Very slightly turbid - clear

BASELINE Environmental Consulting
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

Signature:

[Scale: 1 inch=5 feet]

(revised 9/9/91)

WELL DEVELOPMENT

Project No: S9105

Project Name: Hollis Street Project

Location: 6050 Hollis Street
Emeryville, CA

Recorded by: WKS

Weather Conditions: Cloudy

Precip. in last 5 days (inch): None

Well No.: MW-H3 Date: 9-5-91

Depth of Well from TOC (feet): 15.0

Well Diameter (inch): 2-inch

Screened Interval (feet): 3-15

TOC Elevation (feet msl): 16.95

Water Level from TOC (feet): 4.71 Time: 8:10

Product Level from TOC (feet): None Time: 8:10

Water Level Measurement: Dual interface probe

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance
8:10	0	Very turbid
8:20	2.5	Very turbid
8:29	4.0	Very turbid
8:45	6.0	Very turbid
Pump clogged. Stopped purging. Sand & bentonite inside well.		
Purged very fast Q rate in order to collect sand.		
10:10	16.0	Slightly turbid
Took recharge value.		Slightly turbid.
10:25	20.0	Very slightly turbid
10:35	22.0	Very slightly turbid - clear
10:42	27.0	Very slightly turbid - clear

Recharge:

Time	Water Level (feet)
10:13.51	12.10
10:13.59	12.00
10:14.08	11.90
10:14.18	11.80
10:14.29	11.70

Total Gallons Removed: 27.0

Development Method: Double diaphragm pump

Decontamination Method: TSP & DI water

Average Recharge Rate (foot/minute): 0.37

Purged Water Disposal: Drum # MW-HW2

Number of Drums: 1

Rinsate Disposal: Drum # MW-HW2

(9/9/91)

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

DRILLING LOG

Location	6050 Hollis Street	Boring No.	MW-H3
Driller	ASE	Project No.	S9105
Method	Hollow stem	Date	8-29-91
Logger	WKS Datum ____ Bore size 8-inch	Casing size	2-inch

Depth	Graphic	Lithology	Notes
0		Reddish Brown CLAY, silty gravelly sand; fine-grained, clasts 1/4 - 1/3 inch diameter, sub-angular, loose, damp.	
1	GM		
2		Increase in clay. Gray, sandy, gravelly CLAY; medium-high plasticity, 1/4 - 1/3 inch diameter sub-rounded clasts, loose, moist.	
3	CL		
4			
5		Dark greenish gray, silty CLAY with gravel, medium-high plasticity, very soft, very moist, wet.	Hnu - 10 ppm Pushed sample; no blow counts; strong petroleum odor - diesel?
6	CH		Hnu - 10 ppm of sample
7		Yellowish brown, clayey sandy GRAVEL; clasts sub-rounded - rounded 1/4 - 1 1/2 inch diameter. Medium-fine grained sand, medium dense, very moist.	Decrease in moisture
8			
9	GC		
10			18-19-18-24

Scale: 1 inch = 1.5 feet

(10/23/91)

Signature _____

DRILLING LOG

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

Depth	Graphic	Lithology	Notes
10			
11			
12			
13			7-7-7-2
14	CH	Pale yellowish-brown, sandy silty CLAY; medium-high plasticity, very fine-grained, firm, iron oxide stained, wet.	
15		T.D. 15.0 ft	
16			
17			
18			
19			
20			

Scale: 1 inch = 1.5 feet

(10/23/91)

Signature

ATTACHMENT D

GROUNDWATER SAMPLING FORMS
AND
LABORATORY REPORT

GROUNDWATER SAMPLING

Project No: S9150-AO
Project Name: Banta Collins
Location: 6050 Hollis Street
Emeryville
Recorded by: WKS
Weather Conditions: Overcast
Precip. in last 5 days (inch): None

Well No.: MW-H1 Date: 9-11-91
Depth of Well from TOC (feet): 20
Well Diameter (inch): 2-inch
Screened Interval (feet): 6-20
TOC Elevation (feet msl): 18.90
Water Level from TOC (feet): 5.71 Time: 8:56
Product Level from TOC (feet): None Time: 8:56
Water Level Measurement: Dual interface probe

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(20 ft) − (5.71 ft)] x (.083 ft)^2 x 3.14 x 7.48 =
Well Depth − Water Level; Well radius

2.3 gallons on one well volume.
11.5 gallons in 5 well volumes.
12.0 total gallons removed.

CALIBRATION:

	Time	Temp (°C)	pH	EC (µmho)
Calibration Standard:	9:45	24	7.00	1,000
Before Purging:	9:46	24	7.01	1,100
After Purging:	13:46	25	7.00	1,100

FIELD MEASUREMENTS:

Time	Temp (°C)	pH	EC (µmho)	Cumulative Gallons Removed	Appearance
10:59	--	--	--	0	Clear, slight odor
11:04	21	6.50	1,100	1.5	Clear, slight odor
11:17	21	6.46	1,100	4	Clear, slight odor
11:30	21	6.45	1,100	8	Clear, slight odor
11:41	21	6.42	1,050	12	Clear, slight odor

Water Level After Purging Prior to Sampling (feet): 8.5 Time: 11:48
Appearance of Sample: Clear Time: 11:50
Duplicate/Blank No.: MW-H3a Time: 14:15
Purge Method: Double diaphram pump
Sampling Equipment: Disposable PVC bailer VOC Attachment: Yes for VOAs
Sample Containers: 2-liter amber glass, 3-40 ml VOAs preserved w/HCL
Sample Analyses: TVH as gasoline, as diesel, as kerosene; BTXE Laboratory: Curtis & Tompkins
Decontamination Method: TSP and water, DI water rinse Rinsate Disposal: Drum # MW-HW

(5/15/91)

GROUNDWATER SAMPLING

Project No: S9150-AO
Project Name: Banta Collins
Location: 6050 Hollis Street
Emeryville
Recorded by: WKS
Weather Conditions: Overcast
Precip. in last 5 days (inch): None

Well No.: MW-H2 Date: 9-11-91
Depth of Well from TOC (feet): 20
Well Diameter (inch): 2-inch
Screened Interval (feet): 4.5 - 20
TOC Elevation (feet msl): 21.48
Water Level from TOC (feet): 6.84 Time: 8:59
Product Level from TOC (feet): None Time: 8:59
Water Level Measurement (feet msl): Dual interface probe

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(20 ft) − (6.84 ft)] x (.083 ft)² x 3.14 x 7.48 =
Well Depth − Water Level; Well radius

2.1 gallons on one well volume.
10.6 gallons in 5 well volumes.
11.0 total gallons removed.

CALIBRATION:

	Time	Temp (°C)	pH	EC (μmho)
Calibration Standard:	9:45	24	7.00	1,000
Before Purging:	9:46	24	7.01	1,100
After Purging:	13.48	25	7.00	1,100

FIELD MEASUREMENTS:

Time	Temp (°C)	pH	EC (μmho)	Cumulative Gallons Removed	Appearance
9:43	--	--	--	0	Clear
9:48	20	6.68	180	2	Very slightly turbid - clear
9:59	20	6.65	240	4	Very slightly turbid - clear
10:07	20	6.68	220	6	Very slightly turbid - clear
10:14	20	6.66	215	8	Very slightly turbid - clear
10:27	20	6.66	230	11	Very slightly turbid - clear

Water Level After Purging Prior to Sampling (feet): 8.15 Time: 10:34
Appearance of Sample: Very slightly turbid - clear Time: 10:40
Duplicate/Blank No.: MW-H3a Time: 14:15
Purge Method: Double diaphram pump
Sampling Equipment: Disposable PVC bailer VOC Attachment: Yes for VOAs
Sample Containers: 2 1-liter amber glass, 3-40 ml VOAs preserved w/HCL
Sample Analyses: TVH as gasoline, as diesel, as kerosene; BTXE Laboratory: Curtis & Tompkins
Decontamination Method: TSP and water, DI water rinse Rinsate Disposal: Drum #MW-HW

(5/15/91)

GROUNDWATER SAMPLING

Project No: S9150-AO
Project Name: Banta Collins
Location: 6050 Hollis Street
Emeryville
Recorded by: WKS
Weather Conditions: Overcast
Precip. in last 5 days (inch): None

Well No.: MW-H3 Date: 9-11-91
Depth of Well from TOC (feet): 15
Well Diameter (inch): 2-inch
Screened Interval (feet): 3-15
TOC Elevation (feet msl): 16.95
Water Level from TOC (feet): 4.84 Time: 8:50
Product Level from TOC (feet): Film Time: 8:50
Water Level Measurement (feet msl): Dual interface probe

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(15 ft) − (4.84 ft)] x (.083 ft)^2 x 3.14 x 7.48 =
Well Depth − Water Level; Well radius

1.6 gallons on one well volume.
8.2 gallons in 5 well volumes.
11 total gallons removed.

CALIBRATION:

	Time	Temp (°C)	pH	EC (μmho)
Calibration Standard:	9:45	24	7.00	1,000
Before Purging:	9:45	24	7.01	1,100
After Purging:	13:48	25	7.00	1,100

FIELD MEASUREMENTS:

Time	Temp (°C)	pH	EC (μmho)	Cumulative Gallons Removed	Appearance
13:11	22	6.77	1,250	4	Slightly turbid - filter sand coming through casing wall
13:16	22	6.80	1,100	5	Very slightly turbid - clear
13:24	22	6.80	1,100	7	Very slightly turbid - clear
13:32	22	6.80	1,100	9	Clear
13:41	22	6.80	1,150	11	Clear

Water Level After Purging Prior to Sampling (feet): 5.6 Time: 13:58
Appearance of Sample: Clear Time: 14:00
Duplicate/Blank No.: MW-H3a Time: 14:15
Purge Method: Double diaphram pump
Sampling Equipment: Disposable PVC bailer VOC Attachment: Yes for VOAs
Sample Containers: 2 1-liter amber glass, 3-40 ml VOAs preserved w/HCL
Sample Analyses: TVH as gasoline, as diesel, as kerosene; BTXE Laboratory: Curtis & Tompkins
Decontamination Method: TSP and water, DI water rinse Rinsate Disposal: Drum # MW-HW

(5/15/91)

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

RECEIVED
SEP 27 1991
BASELINE

DATE RECEIVED: 09/11/91
DATE REPORTED: 09/24/91

LABORATORY NUMBER: 105142

CLIENT: BASELINE

PROJECT ID: S9-105-A0

LOCATION: B. COLLINS, 6050 HOLLIS STREET

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins Ltd

NUMBER: 105142
SELINE
S -105-AO
. OLLINS, 6050 HOLLIS STREET

DATE RECEIVED: 09/11/91
DATE ANALYZED: 09/24/91
DATE REPORTED: 09/24/91

al Volatile Hydrocarbons with BTXE in Aqueous Solutions
H y California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
MW-H2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
MW-H1	1,000	15	5.6	2.7	2.9
MW-H3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
MW-H3a	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

cted at or above reporting limit; Reporting limit
d n parentheses.

ATTACHMENT D

GROUNDWATER SAMPLING FORMS
AND
LABORATORY REPORT

GROUNDWATER SAMPLING

Project No: S9150-AO
Project Name: Banta Collins
Location: 6050 Hollis Street
Emeryville
Recorded by: WKS
Weather Conditions: Overcast
Precip. in last 5 days (inch): None

Well No.: MW-H1 Date: 9-11-91
Depth of Well from TOC (feet): 20
Well Diameter (inch): 2-inch
Screened Interval (feet): 6-20
TOC Elevation (feet msl): 18.90
Water Level from TOC (feet): 5.71 Time: 8:56
Product Level from TOC (feet): None Time: 8:56
Water Level Measurement: Dual interface probe

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	Time	Temp (°C)	pH	EC (μmho)
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11:41	21	6.42	1,050	12	Clear, slight odor

Water Level After Purging Prior to Sampling (feet): 8.5 Time: 11:48
Appearance of Sample: Clear Time: 11:50
Duplicate/Blank No.: MW-H3a Time: 14:15
Purge Method: Double diaphram pump
Sampling Equipment: Disposable PVC bailer VOC Attachment: Yes for VOAs
Sample Containers: 2-liter amber glass, 3-40 ml VOAs preserved w/HCL
Sample Analyses: TVH as gasoline, as diesel, as kerosene; BTXE Laboratory: Curtis & Tompkins
Decontamination Method: TSP and water, DI water rinse Rinsate Disposal: Drum # MW-HW

(5/15/91)

GROUNDWATER SAMPLING

Project No: S9150-AO
Project Name: Banta Collins
Location: 6050 Hollis Street
Emeryville
Recorded by: WKS
Weather Conditions: Overcast
Precip. in last 5 days (inch): None

Well No.: MW-H2 Date: 9-11-91
Depth of Well from TOC (feet): 20
Well Diameter (inch): 2-inch
Screened Interval (feet): 4.5 - 20
TOC Elevation (feet msl): 21.48
Water Level from TOC (feet): 6.84 Time: 8:59
Product Level from TOC (feet): None Time: 8:59
Water Level Measurement (feet msl): Dual interface probe

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

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(Well Depth; Water Level; Well radius)

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10.6 gallons in 5 well volumes.
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CALIBRATION:

	Time	Temp (°C)	pH	EC (µmho)
Calibration Standard:	9:45	24	7.00	1,000
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FIELD MEASUREMENTS:

Time	Temp (°C)	pH	EC (µmho)	Cumulative Gallons Removed	Appearance
9:43	--	--	--	0	Clear
9:48	20	6.68	180	2	Very slightly turbid - clear
9:59	20	6.65	240	4	Very slightly turbid - clear
10:07	20	6.68	220	6	Very slightly turbid - clear
10:14	20	6.66	215	8	Very slightly turbid - clear
10:27	20	6.66	230	11	Very slightly turbid - clear

Water Level After Purging Prior to Sampling (feet): 8.15 Time: 10:34
Appearance of Sample: Very slightly turbid - clear Time: 10:40
Duplicate/Blank No.: MW-H3a Time: 14:15
Purge Method: Double diaphram pump
Sampling Equipment: Disposable PVC bailer VOC Attachment: Yes for VOAs
Sample Containers: 2 1-liter amber glass, 3-40 ml VOAs preserved w/HCL
Sample Analyses: TVH as gasoline, as diesel, as kerosene; BTXE Laboratory: Curtis & Tompkins
Decontamination Method: TSP and water, DI water rinse Rinsate Disposal: Drum #MW-HW

(5/15/91)

GROUNDWATER SAMPLING

Project No: S9150-AO
Project Name: Banta Collins
Location: 6050 Hollis Street
Emeryville
Recorded by: WKS
Weather Conditions: Overcast
Precip. in last 5 days (inch): None

Well No.: MW-H3 Date: 9-11-91
Depth of Well from TOC (feet): 15
Well Diameter (inch): 2-inch
Screened Interval (feet): 3-15
TOC Elevation (feet msl): 16.95
Water Level from TOC (feet): 4.84 Time: 8:50
Product Level from TOC (feet): Film Time: 8:50
Water Level Measurement (feet msl): Dual interface probe

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Calibration Standard:	9:45	24	7.00	1,000
Before Purging:	9:45	24	7.01	1,100
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FIELD MEASUREMENTS:

Time	Temp (°C)	pH	EC (μmho)	Cumulative Gallons Removed	Appearance
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13:16	22	6.80	1,100	5	Very slightly turbid - clear
13:24	22	6.80	1,100	7	Very slightly turbid - clear
13:32	22	6.80	1,100	9	Clear
13:41	22	6.80	1,150	11	Clear

Water Level After Purging Prior to Sampling (feet): 5.6 Time: 13:58
Appearance of Sample: Clear Time: 14:00
Duplicate/Blank No.: MW-H3a Time: 14:15
Purge Method: Double diaphram pump
Sampling Equipment: Disposable PVC bailer VOC Attachment: Yes for VOAs
Sample Containers: 2 1-liter amber glass, 3-40 ml VOAs preserved w/HCL
Sample Analyses: TVH as gasoline, as diesel, as kerosene; BTXE Laboratory: Curtis & Tompkins
Decontamination Method: TSP and water, DI water rinse Rinsate Disposal: Drum # MW-HW

(5/15/91)

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

RECEIVED
SEP 27 1991
BASELINE

DATE RECEIVED: 09/11/91
DATE REPORTED: 09/24/91

LABORATORY NUMBER: 105142

CLIENT: BASELINE

PROJECT ID: S9-105-A0

LOCATION: B. COLLINS, 6050 HOLLIS STREET

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 105142
CLIENT: BASELINE
PROJECT ID: S9-105-AO
LOCATION: B. COLLINS, 6050 HOLLIS STREET

DATE RECEIVED: 09/11/91
DATE ANALYZED: 09/24/91
DATE REPORTED: 09/24/91

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
105142-1	MW-H2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105142-2	MW-H1	1,000	15	5.6	2.7	2.9
105142-3	MW-H3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105142-4	MW-H3a	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	94

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 105142
CLIENT: BASELINE
PROJECT ID: S9-105-AO
LOCATION: B. COLLINS, 6050 HOLLIS STREET

DATE RECEIVED: 09/11/91
DATE EXTRACTED: 09/18/91
DATE ANALYZED: 09/21/91
DATE REPORTED: 09/24/91

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
105142-1	MW-H2	ND	ND	50
105142-2	MW-H1	ND	390	50
105142-3	MW-H3	ND	120	50
105142-4	MW-H3a	ND	220	50

ND = Not detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	10
RECOVERY, %	85

10542

BASELINE

5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

CHAIN OF CUSTODY RECORD

Turn-Around Time Normal
Lab Curtis & Tompkins
Contact Person Bill Scott

Project No.	Project Name and Location
9105-A0	B. Collins 6050 Hollis Street

Samplers: (Signature) William F Scott

	No. Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	Analysis: TPH as gasoline	Analysis: TEPH as diesel + kerosene	Analysis: BTX&E	Remarks	Detection Limits
-1	MW-H2	9-11-91	10:40	water			5		X	X	X		Pt. Valley
-2	MW-H1	9-11-91	14:50	water			5		X	X	X		
-3	MW-H3	9-11-91	14:00	water			5		X	X	X		
-4	MW-H3a	9-11-91	14:15	water			5		X	X	X		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time
	9-11-91		

Condition of Samples upon Arrival at Laboratory:
Good - cold
Conforms to C.O.C.

Remarks:

ATTACHMENT E

LABORATORY REPORT, SOIL

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
2323 Fifth Street. Berkeley. CA 94710. Phone (415) 486-0900

DATE RECEIVED: 08/29/91
DATE REPORTED: 09/05/91

LABORATORY NUMBER: 105007

CLIENT: BASELINE ENVIRONMENTAL

PROJECT ID: S9-105

LOCATION: BONTA COLLINS

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 08/29/91
DATE REQUESTED: 09/05/91
DATE REPORTED: 09/17/91

LABORATORY NUMBER: 105072

CLIENT: BASELINE ENVIRONMENTAL

PROJECT ID: S9-105

LOCATION: 6050 HOLLIS STREET

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 105007
CLIENT: BASELINE ENVIRONMENTAL
PROJECT ID: S9-105
LOCATION: BONTA COLLINS

DATE RECEIVED: 08/29/91
DATE ANALYZED: 09/05/91
DATE REPORTED: 09/05/91

Total Volatile Hydrocarbons with BTXE in Soils and Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
105007-1	MW-H3	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
105007-2	MW-H2	ND(1.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	106

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 105072
CLIENT: BASELINE ENVIRONMENTAL
PROJECT ID: S9-105
LOCATION: 6050 HOLLIS STREET

DATE RECEIVED: 08/29/91
DATE REQUESTED: 09/05/91
DATE EXTRACTED: 09/11/91
DATE ANALYZED: 09/13,15/91
DATE REPORTED: 09/17/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
105072-1	MW-H3	ND	800	10
105072-2	MW-H2	ND	ND	1.0

ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	98

105004 (COC of Atlas) new login 105072

B[redacted]LIN[redacted]
5900 Hollis Street, Suite D
Emeryville, CA 94608
(415) 420-8686

CHAIN OF CUSTODY RECORD

Turn-Around Time: NORMAL
Lab: Curtis & Thompkins
Contact Person:

Project No.	Project Name and Location
59-105	~~5900~~ 6050 Hollis St.

Samplers: (Signature) William K [signature]

	No. Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	Analysis: TPH (Gas) EPA 5030/8015	BTXE EPA 8020								Remarks	Detection Limits
1	MW-113	8/29/91	11:45	Soil	6'-6½'		1		X	X								Hold Sample after analysis	
2	MW-112	8/29/91	8:13	Soil	6'-6½'		1		X	X									

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
[signature]	8/29/91		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time
		[signature]	8/29/91 / 16:30

Condition of Samples upon Arrival at Laboratory: chilled ; intact

Remarks:

VERBAL ADDITIONS / CANCELLATIONS TO ANALYSIS REQUEST SHEET

CLIENT: Baseline DATE: 9/5/91

REQUESTED BY: Scott, Bill TIME: 4:15 am (pm)

RECORDED BY: Joanne proj. S9-105

Current Lab ID (Previous Lab ID)	Client ID	Circle matrix	Specify add or cancel	Analysis	Due date
105072-001 (105007-001)	MW-H-3	(soil) water other	Add	TEH	9/18
105072-002 (105007-002)	MW-H-2	(soil) water other	Add	TEH	9/18
(-)		soil water other			
(-)		soil water other			
(-)		soil water other			
(-)		soil water other			
(-)		soil water other			
(-)		soil water other			
(-)		soil water other			

Original in job jacket. Copies to analytical departments.