BASELINE

ENVIRONMENTAL CONSULTING

9 March 1989
S9-111

• No piping or dispenser samples? done later (T1-T6)

Ms. Mary Jo Meyers-Barnes
Alameda County Hazardous Materials Division
80 Swan Way, Suite 200
Oakland, CA 94621

Subject: Underground Tank Removal Sampling Results, Port of Oakland, 801 Maritime Street

Dear Ms. Meyers-Barnes:

On 16 February 1989, three underground fuel storage tanks were removed from the subject site. BASELINE was retained by the Port of Oakland (Port) to supervise tank removal activities, perform soil sampling, provide documentation of tank removal activities, and to recommend remedial actions. The purpose of this letter is to transmit to the County the analytical results for the soil and water samples collected in the tank excavation area as requested. A complete report describing the underground tank removal and remedial activities for the site, including sampling techniques and results, is being prepared by BASELINE for the Port, for subsequent submittal to the County and the Regional Water Quality Control Board, San Francisco Bay Region.

Ten soil samples and one water sample were collected by BASELINE in the former tank area immediately after removal of the three tanks. In addition, soil samples were collected from the stockpiles to characterize the waste for disposal purposes. Sampling locations are shown in Figure 1 (the water sample was collected in the excavation). The samples were transported to Curtis and Tompkins, Ltd. in Berkeley following proper chain-of-custody procedures. The analytical results are summarized in Table 1; and the laboratory reports are included as Attachment A. The results indicate that an unauthorized release(s) of petroleum hydrocarbons has occurred in the tank area.

As lead agency fIt is our understanding that the County Hazardous Materials Division, as lead agency for the investigation of unauthorized releases from underground storage tanks, will require that the Port conduct a groundwater investigation and develop a remediation plan. A work plan for the groundwater investigation will be included in the report on underground tank removal and remedial activities, to be submitted following your request.

Please do not hesitate to call if you have any questions regarding the project.

Sincerely,

Irene Kan

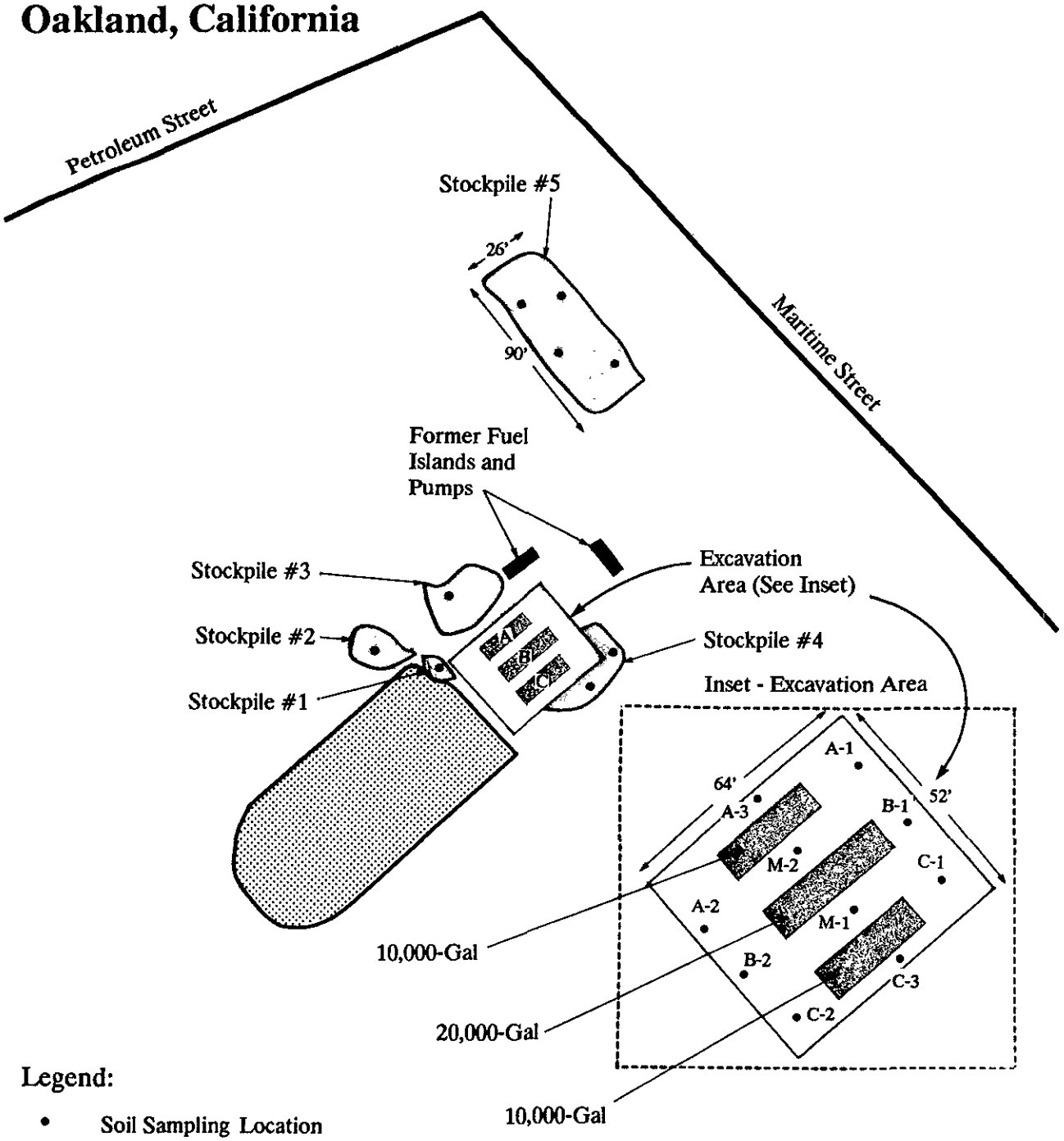
Irene Kan, MPH
Senior Associate

IK:dm:S17
Attachment
cc: M. Heffes, Port of Oakland

5900 Hollis Street, Suite D • Emeryville, CA 94608 • (415) 420-8686 • FAX 420-1707

SOIL SAMPLING LOCATIONS
Port of Oakland
801 Maritime Street
Oakland, California

Figure 1



Legend:

- • Soil Sampling Location
- Former Underground Tank
- Stockpile of Soils Excavated from Tank Area
- Construction Area

Not to Scale

BASELINE

BASELINE

TABLE 1

SOIL AND WATER SAMPLING ANALYTICAL RESULTS FOR UNDERGROUND TANK REMOVAL
801 Maritime Street, Oakland

Sample ID[1]	Depth (feet)	Total Volatile HC	Total Heavy HC	Benzene	Toluene	Xylenes	Ethylbenzene
Tank Area							
Soil Samples (mg/kg)							
A-1	8	ND	27[2]	ND	ND	ND	ND
A-2	8	ND	ND	ND	0.017	0.029	ND
A-3	8	ND	ND	ND	ND	ND	ND
B-1	9.5	ND	ND	ND	ND	ND	ND
B-2	9.5	ND	3,600[3]	ND	ND	ND	ND
C-1	6	ND	ND	0.025	0.035	0.045	0.025
C-2	6	25	1,600[4]	<0.5	<0.5	<0.5	<0.5
C-3	6	ND	ND	ND	ND	ND	ND
M-1	6	ND	ND	ND	0.1	0.145	ND
M-2	6	10	ND	ND	0.26	0.4	0.08
Tank Area Water Sample (mg/L)							
W-1/W-2/W-3		0.48	21	0.019	0.026	0.078	0.017
Stockpile Soil Samples (mg/kg)							
ST-1	-	ND	ND	ND	ND	ND	ND
ST-2	-	ND	920[5]	ND	ND	ND	ND
ST-3a & b[6]	-	ND	ND	ND	ND	ND	ND
ST-4a & b[6]	-	ND	ND	ND	ND	ND	ND
ST-5a & b[6]	-	ND	110[2]	ND	ND	ND	ND
ST-5c & d[6]	-	<2.5	149	ND	ND	0.0062	ND
Detection Limit (mg/kg)		10	10	0.005	0.005	0.005	0.005
EPA Method		8015/5030	8015	8020/602	8020/602	8020/602	8020/602

1 Samples collected by Baseline Environmental Consulting. See Figure 1 for soil sampling locations. Water sample was collected in tank area (in three containers).
2 As diesel.
3 Quantitation based on largest peaks in the C-6 to C-20 boiling range.
4 Quantitation based on largest peaks in the C-6 to C-9 boiling range.
5 Quantitation based on largest peaks in the C-12 to C-24 boiling range.
6 Composite sample.
- = Not Applicable.
NA = not analyzed.
ND = not detected.

S17-3/9/89

ATTACHMENT A

Laboratory Reports

Chain-of-Custody Records

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

LABORATORY NUMBER: 16845
CLIENT: BASELINE
JOB NUMBER: 89-111
JOB LOCATION: 801 MARITIME

DATE RECEIVED: 02/17/89
DATE ANALYZED: 02/28/89
DATE REPORTED: 03/06/89
PAGE 1 OF 4

Total Volatile Hydrocarbons (TVH) by EPA 8015
Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 602/8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	TVH *	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
16845-1	W-1/W-2	480	19	26	17	78

* NOTE: Fingerprint pattern does not match gasoline standard.

ND = None Detected; Limit of detection is indicated in parentheses.

QA/QC SUMMARY

%RPD	12
%RECOVERY	86

LABORATORY DIRECTOR

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

LABORATORY NUMBER: 16845
CLIENT: BASELINE
JOB #: S9-111
LOCATION: 801 MARITIME

DATE RECEIVED: 02/17/89
DATE ANALYZED: 02/22/89
DATE REPORTED: 03/06/89

Total Heavy Petroleum Hydrocarbons in Aqueous Solutions
EPA 8015 (Modified)
Extraction Method: EPA 3510

LAB ID	CLIENT ID	KEROSINE (mg/L)	DIESEL (mg/L)	OTHER (mg/L)
16845-3	W-3	ND(0.5)	21	ND(0.5)

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	11
Spike: % Recovery	126

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

LABORATORY NUMBER: 16845
CLIENT: BASELINE
JOB NUMBER: S9-111
JOB LOCATION: 801 MARITIME

DATE RECEIVED: 02/17/89
DATE ANALYZED: 02/28/89
DATE REPORTED: 03/06/89

Total Volatile Hydrocarbons (TVH) by EPA 8015
Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 602/8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	TVH * (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
16845-4	M-2	10	ND(5)	260	80	400
16845-5	A-1	ND(10)	ND(5)	ND(5)	ND(5)	ND(5)
16845-6	A-2	ND(10)	ND(5)	17	ND(5)	29
16845-7	A-3	ND(10)	ND(5)	ND(5)	ND(5)	ND(5)
16845-8	B-1	ND(10)	ND(5)	ND(5)	ND(5)	ND(5)
16845-9	B-2	ND(10)	ND(5)	ND(5)	ND(5)	ND(5)
16845-10	C-1	ND(10)	25	35	25	45
16845-11	C-2	25	ND(500)	ND(500)	ND(500)	ND(500)
16845-12	C-3	ND(10)	ND(5)	ND(5)	ND(5)	ND(5)
16845-13	M-1	ND(10)	ND(5)	100	ND(5)	145

* NOTE: Fingerprint pattern does not match gasoline standard.

ND = None Detected; Limit of detection is indicated in parentheses.

QA/QC SUMMARY

%RPD	12
%RECOVERY	86

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

LABORATORY NUMBER: 16845
CLIENT: BASELINE
JOB #: S9-111
LOCATION: 801 MARITIME

DATE RECEIVED: 01/26/89
DATE ANALYZED: 02/21/89
DATE REPORTED: 03/06/89

Total Heavy Petroleum Hydrocarbons in Soils & Wastes
EPA 8015 (Modified)
Extraction Method: EPA 3550

LAB ID	CLIENT ID	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16845-4	M-2	ND(10)	ND(10)	ND(10)
16845-5	A-1	ND(10)	27	ND(10)
16845-6	A-2	ND(10)	ND(10)	ND(10)
16845-7	A-3	ND(10)	ND(10)	ND(10)
16845-8	B-1	ND(10)	ND(10)	ND(10)
16845-9	B-2	ND(10)	ND(10)	3,600 *
16845-10	C-1	ND(10)	ND(10)	ND(10)
16845-11	C-2	ND(10)	ND(10)	1,600 **
16845-12	C-3	ND(10)	ND(10)	ND(10)
16845-13	M-1	ND(10)	ND(10)	ND(10)

* Fingerprint pattern does not match hydrocarbon standards; Quantitation based on largest peaks within C6-C20 boiling range.

** Fingerprint pattern does not match hydrocarbon standards; Quantitation based on largest peaks within C6-C9 boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	4
Spike: % Recovery	107

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

LABORATORY NUMBER: 16844
CLIENT: BASELINE
JOB #: S9-111
LOCATION: P OF O/801 MARITIME

DATE RECEIVED: 02-17-89
DATE ANALYZED: 02-17-89
DATE REPORTED: 02-23-89

Total Petroleum Hydrocarbons in Soils & Wastes
EPA 8015 (Modified)
Extraction Method: EPA 3550

LAB ID	CLIENT ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16844-1	ST - 1	ND(10)	ND(10)	ND(10)	ND(10)
16844-2	ST - 2	ND(10)	ND(10)	ND(10)	920 *
16844-3/4	COMPOSITE ST - 3a ST - 3b	ND(10)	ND(10)	ND(10)	ND(10)

* Fingerprint pattern does not match Hydrocarbon Standards. Quantitation based on largest peaks withing C12-C24 boiling range.

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	16
Spike: % Recovery	97

LABORATORY DIRECTOR

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

LABORATORY NUMBER: 16844-1
CLIENT: BASELINE
JOB #: S9-111
LOCATION: P OF O/801 MARITIME
SAMPLE ID: ST - 1

DATE RECEIVED: 02-17-89
DATE ANALYZED: 02-17-89
DATE REPORTED: 02-23-89

EPA 8020: Volatile Aromatic Hydrocarbons in Soils & Wastes
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/Kg	LOD ug/Kg
Benzene	ND	5
Toluene	ND	5
Ethyl Benzene	ND	5
Total Xylenes	ND	5
Chlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = None Detected. Limit of detection (LOD) in last column.

QA/QC:

Duplicate: Relative % Difference	15
Average Spike Recovery %	99

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

LABORATORY NUMBER: 16844-2
CLIENT: BASELINE
JOB #: S9-111
LOCATION: P OF O/801 MARITIME
SAMPLE ID: ST - 2

DATE RECEIVED: 02-17-89
DATE ANALYZED: 02-17-89
DATE REPORTED: 02-23-89

EPA 8020: Volatile Aromatic Hydrocarbons in Soils & Wastes
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/Kg	LOD ug/Kg
Benzene	ND	5
Toluene	ND	5
Ethyl Benzene	ND	5
Total Xylenes	ND	5
Chlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = None Detected. Limit of detection (LOD) in last column.

QA/QC:

Duplicate: Relative % Difference	15
Average Spike Recovery %	99

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

LABORATORY NUMBER: 16844-3/4
CLIENT: BASELINE
JOB #: S9-111
LOCATION: P OF O/801 MARITIME
SAMPLE ID: COMPOSTE ST - 3a/ST - 3b

DATE RECEIVED: 02-17-89
DATE ANALYZED: 02-17-89
DATE REPORTED: 02-23-89

EPA 8020: Volatile Aromatic Hydrocarbons in Soils & Wastes
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/Kg	LOD ug/Kg
Benzene	ND	5
Toluene	ND	5
Ethyl Benzene	ND	5
Total Xylenes	ND	5
Chlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,3-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = None Detected. Limit of detection (LOD) in last column.

QA/QC:

Duplicate: Relative % Difference	15
Average Spike Recovery %	99

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

LABORATORY NUMBER: 16856
CLIENT: BASELINE
JOB #: S9-111
LOCATION: 801 MARITIME

DATE RECEIVED: 02/21/89
DATE ANALYZED: 02/21/89
DATE REPORTED: 02/27/89

Total Petroleum Hydrocarbons in Soils & Wastes
EPA 8015 (Modified)
Extraction Method: EPA 3550

LAB ID	COMPOSITE ID	GASOLINE (mg/Kg)	KEROSINE (mg/Kg)	DIESEL (mg/Kg)	OTHER (mg/Kg)
16856-1,2	ST-4a, ST-4b	ND(10)	ND(10)	ND(10)	ND(10)

ND = Not Detected; Limit of detection in parentheses.

QA/QC SUMMARY

Duplicate: Relative % Difference	4
Spike: % Recovery	107

LABORATORY DIRECTOR

CHROMALAB, INC.

Analytical Laboratory
Specializing in G. C.

- Environmental Analysis
- Hazardous Waste
- Drinking Water
- Research and Method Development
- Consultation
- Training

March 8, 1989 ChromaLab File # 0389005

Baseline Environmental Consulting

Attn: Irene Kan

Re: Four soil samples marked ST-5a,b,c, and d for gasoline, BTEX and TEPH analysis.

Duration of Analysis: March 6-8, 1989

Results:

Sample No.	Gasoline (ppm)	Diesel (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Total Xylenes (ppb)
ST-5a+b	N.D.	110	N.D.	N.D.	N.D.	N.D.
ST-5c+d	<2.5	149	N.D.	N.D.	6.2	<5.0
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Rec.	109.3%	105.2%	90.4%	93.7%	86.4%	87.0%
MDL	2.5	5.0	5.0	5.0	5.0	5.0
Method #	mod.8015	mod.8015	8020	8020	8020	8020

ChromaLab, Inc.

Eric Tam
Chief Chemist

David Duong
Senior Chemist

315 Washington Street
Oakland, CA 94607
(415) 763-7037

CHAIN OF CUSTODY RECORD

Turn-Around Time normal
Lab Curtis & Tompkins
Contact Person [illegible]

Project No.	Project Name and Location
89-111	P&O/801 Maritime

Samplers: (Signature)
Irene Kan

No. Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	TPH light	TPH heavy	BTX & E (EPA 8020)							Remarks	Detection Limits
A-1	2/16/89	13:42	soil	8'	(5)			X	X	X								
A-2	2/16/89	14:15	soil	8'	(6)			X	X	X								
A-3	2/16/89	14:17	soil	8'	(7)			X	X	X								
B-1	2/16/89	13:45	soil	9.5'	(8)			X	X	X								
B-2	2/16/89	14:10	soil	9.5'	(9)			X	X	X								
C-1	2/16/89	13:45	soil	6'	(10)			X	X	X								
C-2	2/16/89	14:08	soil	6'	(11)			X	X	X								
C-3	2/16/89	14:05	soil	6'	(12)			X	X	X								
M-1	2/16/89	13:50	soil	6'	(13)			X	X	X								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Irene Kan	2/16/89 4:00 PM	Teresa Amaya			
Relinquished by: (Signature) Teresa Amaya	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time 2/17 10:00	Remarks: RWQCB Guidelines to June '88	

BASELINE

315 Washington Street
Oakland, CA 94607
(415) 763-7037

CHAIN OF CUSTODY RECORD

Turn-Around Time: normal
Lab: Curtis & Tompkins
Contact Person:

Project No.: 59-111
Project Name and Location: P of O / 801 Maritime
Samplers: (Signature) Irene Kan

No. Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location	TPH light	TPH heavy	BTX & E EPA 8020	BTX & E EPA 602	Modified 8015	Total Hydrocarbons	Remarks	Detection Limits
M-2	2/16/89	13:55	soil	6'	(4)			X	X	X					
ST-1 (1)	2/16/89	14:30	soil	N/A				X (scribbled out)	X (scribbled out)	X		X		24-hr	
ST-2 (2)	2/16/89	14:40	soil	N/A				X (scribbled out)	X (scribbled out)	X		X		24-hr	
ST-3a (3)	2/16/89	14:45	soil	N/A	X (ST-3a and ST-3b bracketed)			X (scribbled out)	X (scribbled out)	X		X		composite into 1 sample 24hr (ST-3a and ST-3b bracketed)	
ST-3b (4)	2/16/89	14:50	soil	N/A				X (scribbled out)	X (scribbled out)	X		X			
W-1	2/16/89	13:30	water	(1)				X	X		X				
W-2	2/16/89	13:33	water	(2)				X	X		X				
W-3.	2/16/89	13:35	water	(3)				X	X		X				

684H … ue … 2/21/89

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Irene Kan	2/16/89 4:00 PM	Teresa Amaya			
Relinquished by: (Signature) Teresa Amaya	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) [signature]	Date / Time 2/17 10:00	Remarks: RWQCB Guidelines to June '88	

BASELINE
315 Washington Street
Oakland, CA 94607
(415) 763-7037

CHAIN OF CUSTODY RECORD

Turn-Around Time NORMAL (5-DAY)
Lab CHROMA LAB (SAN RAMON) 831-178[illegible]
Contact Person ERIC TAM

Project No.	Project Name and Location
89-111	801 MARITIME

Samplers: (Signature) Erica Amaya

No.	Station	Date	Time	Media	Depth	Composites	No. of Containers	Station Location
	ST-5a	3/2/89	13:53	soil		/		STOCKPILE
	ST-5b	3/2/89	13:58	soil		/		"
	ST-5c	3/2/89	14:05	soil		X		"
	ST-5d	3/2/89	14:15	soil		X		"

Analysis: TRH-EXTRACTABLES (MODIFIED EPA 5030) - DIESEL & GASOLINE; B T X & E

Remarks	Detection Limits
COMPOSITE SAMPLES IN LAB	GASOL. = 10 PPM
COMPOSITE SAMPLES IN LAB	"

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Erica Amaya	3/3/89 11:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: COURIER ON MARCH 3	
	3/3/89 11:45			2 LAB ANALYSES	