PORT OF OAKLAND

September 11, 2001

Mr. Barney Chan
Hazardous Materials Specialist
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

#3780

SEP 13 2001

SUBJECT: 801 Maritime Street, UST Site
Oakland, California
STID #3780

Dear Mr. Seto:

Please find enclosed a report titled, *Groundwater Monitoring and Sampling Report, 801 Maritime Street, Oakland, California*, prepared on the behalf of the Port of Oakland (Port) by Harding ESE, and dated August 31, 2001.

Should you have any questions about the enclosed report or the site in general, please contact me at 627-1373 or by e-mail at jprall@portoakland.com.

Sincerely,

John Prall

John Prall, R.G.
Associate Environmental Scientist

Enclosure

CC: Jeff Jones

Harding ESE
A MACTEC COMPANY

Harding ESE, Inc.
600 Grand Avenue
Suite 300
Oakland, CA 94610
Telephone: 510/451-1001
Fax. 510/451-3165
Home Page. www.mactec.com

3780

August 31, 2001

50841.1

Mr. John Prall
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

Groundwater Monitoring and Sampling Report
801 Maritime Street
Oakland, California

Dear Mr. Prall:

Harding ESE, Inc. (Harding), has prepared this Groundwater Monitoring and Sampling Report on behalf of the Port of Oakland for the groundwater monitoring and sampling performed on July 26, 2001 at the 801 Maritime Street site in Oakland, California. A site location map is shown on Plate 1.

The scope of work included collecting a groundwater sample from MW-1 and testing the groundwater sample for Total Petroleum Hydrocarbons as gasoline (TPH-g) and diesel (TPH-d), benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl t-butyl ether (MTBE), and total dissolved solids (TDS).

Monitoring well MW-1 is located in the vicinity of three former underground storage tanks (USTs) removed from the site in February 1989. The USTs included two 10,000-gallon tanks (CF-06 and CF-35) and one 20,000-gallon tank (CF-07).

GROUNDWATER SAMPLING

Harding performed the monitoring and sampling on July 26, 2001. Prior to purging and sampling the monitoring well, Harding measured the depth to groundwater below the top of the well casing with an electric water level indicator. After measuring the depth to water, Harding purged the well using a PVC bailer. Conductivity, pH, and temperature were monitored periodically during purging. Harding collected the groundwater samples after removing a minimum of three well-casing volumes of water and when the conductivity, pH, and temperature measurements had stabilized. The depths to groundwater and field parameter measurements were recorded on a Groundwater Sampling Form. The purge water was stored in the product recovery tank at the nearby 2277 7th Street facility.

Harding collected groundwater samples from the monitoring well using a disposable bailer and then transferred the groundwater into laboratory-provided containers. Sample containers were labeled with the sample number, date and time of collection, and sampler's initials, then placed in an insulated cooler with ice. The samples were delivered under chain-of-custody protocol to Curtis and Tompkins, Ltd., a California certified analytical laboratory.

MONITORING WELL GROUNDWATER LEVEL

Depth to water data is summarized in Table 1. The top of casing elevation was re-surveyed after the retro-fitting activities in April 2001. The groundwater elevation was 6.53 in July, 2001, similar to the measured groundwater elevation in April 2001.

LABORATORY ANALYSIS GROUNDWATER SAMPLES

Curtis and Tompkins, Ltd. performed the chemical analyses of the groundwater samples using the following analytical methods:

- Total petroleum hydrocarbons as gasoline (TPHg) in accordance with EPA Method 8015 modified.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl t-butyl ether (MTBE) in accordance with EPA Method 8020B.
- TPH as diesel (TPHd) in accordance with EPA Method 8015 modified following a silica-gel cleanup procedure.
- Total dissolved solids (TDS) by EPA method 160.

The laboratory results for the groundwater sample are summarized in Table 2, and are shown on Plate 2. Copies of the laboratory results, chromatograms, and chain-of-custody are provided in Appendix A.

FINDINGS

The results of the July 26, 2001 groundwater monitoring and sampling of MW-1 are summarized below:

- TPHg was detected at a concentration of 130 µg/L.
- Benzene, toluene, and ethylbenzene were detected at concentrations of 17 µg/L, 8.7 µg/L, and 3.2 µg/L, respectively. m,p-Xylenes were detected at a concentration of 8.7 µg/L, and o-xylenes were detected at a concentration of 5.5 µg/L.
- MTBE was not detected above the reporting limit of 2.0 µg/L.

- TPHd was not detected above the reporting limit of 50 µg/L.
- TDS was reported at a concentration of 1,880 mg/L.

CLOSURE

We trust that this provides the information required at this time. If you have any questions or need additional information, please contact Luis Fraticelli at (510) 451-1001.

Yours very truly,

HARDING ESE, INC.

Trish A. Eliasson
Staff Engineer

Luis A. Fraticelli, R.G.
Associate Geologist

REGISTERED GEOLOGIST
LUIS A. FRATICELLI
No. 6521
Exp. 04/03
STATE OF CALIFORNIA

TAE/LF:dmw/P:wpdata/50841/038068P

Attachments: Table 1 – Groundwater Elevations
Table 2 – Summary of Laboratory Results
Plate 1 – Site Location Map
Plate 2 – Laboratory Results, July 26, 2001
Appendix A - Laboratory Reports

TABLES

Table 1. Groundwater Elevations
801 Maritime Street
Oakland, California

Monitoring Well ID	Elevation of Top of Casing (feet)	Date of Monitoring	Measured Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Note
MW-1	13.81	7/10/1996	7.36	-	6.45 (3.25)	1,2
	(10.61)	12/27/1996	7.55	-	6.26 (3.06)	2,4
		3/25/1997	7.31	-	6.50 (3.30)	2,4
		6/23/1997	7.55	-	6.26 (3.06)	2,4
	13.55	9/30/1997	7.46	-	6.09	3,4
		12/31/1997	7.17	-	6.38	4
	14.18	4/17/2001	7.59	-	6.59	5
	14.18	7/26/2001	7.65	-	6.53	6

Notes:

1 Data from Table 2, Summary of Results of Groundwater Sampling, Port of Oakland Tanks CF-06, CF-07, and CF-35, 801 Maritime Street, Oakland, California, dated August 7, 1996, by Alisto Engineering Group.

2 Elevation data corrected relative to Port of Oakland datum: elevation data in parentheses referenced to mean sea level.

3 Top of casing cut and resurveyed on September 30, 1997 relative to Port of Oakland datum.

4 Data from Table 2, Summary of Laboratory Results, 801 Maritime Street, Oakland, California, dated March 3, 1998 by Innovative Technical Solutions, Inc.

5 Top of casing elevation changed due to retrofitting activities on April 17, 2001.

6 Elevation remeasured in 2001 after retrofitting activities on April 17, 2001. Relative to Port of Oakland datum.

Table 2. Summary of Laboratory Results
801 Maritime Street
Oakland, California

Monitoring Well ID	Date of Sampling	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPHd (µg/L)	TDS (mg/L)	Note
MW-1	7/10/1996	180	27	14	5.4	23	-	7,100	-	1
	12/27/1996	180	30	15	5.8	26	-	670	-	2
	3/25/1997	180	21	11	4	17	-	19	1,840	2
	6/23/1997	170	20	11	4.1	18	-	3,000	1,320	2
	9/30/1997	190	35	17	5.2	22	-	830	2,020	2, 3
	12/31/1997	130	26	14	4.3	18	-	<48	1,880	2, 3
	4/17/2001	160	11	6.2	2.6	6.8 (m,p-) 4.4 (o-)	ND(2.0)	59	1,860	4,5
	7/26/2001	130	17	8.7	3.2	8.7 (m,p-) 5.5 (o-)	ND(2.0)	ND(50)	1,880	4

Notes:

TPHg = Total petroleum hydrocarbons (TPH) as gasoline
MTBE= Methyl t-butyl ether
TPHd = TPH as diesel
TDS = Total dissolved solids
ND= Not Detected above reporting limit shown in parentheses.

1 Data from Table 2, Summary of Results of Groundwater Sampling, Port of Oakland Tanks CF-06, CF-07, and CF-35. 801 Maritime Street, Oakland, California, dated August 7, 1996, by Alisto Engineering Group.

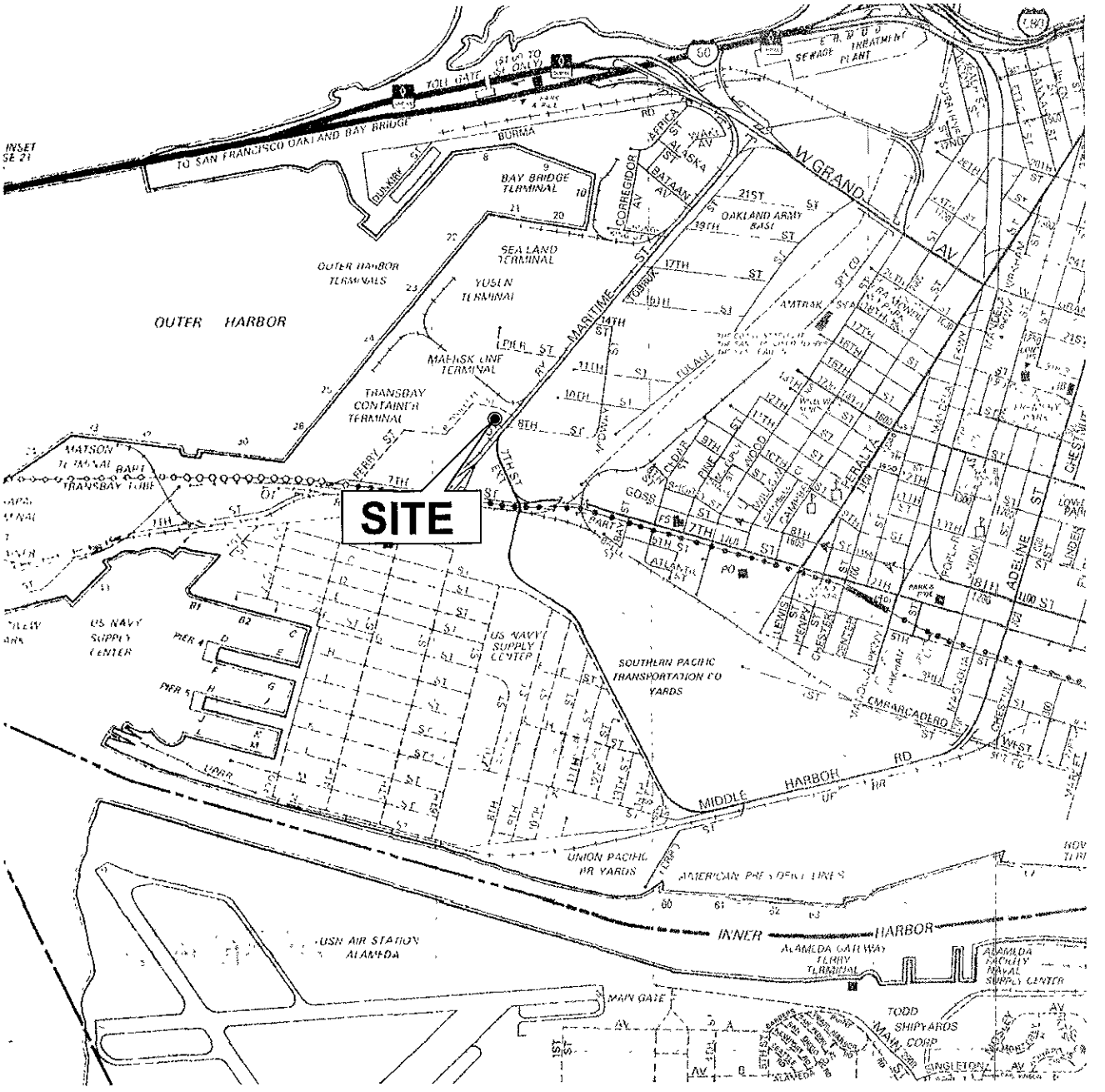
2 Data from Table 2, Summary of Laboratory Results, 801 Maritime Street, Oakland, California, dated March 3, 1998 by Innovative

3 Laboratory results represent the highest concentrations reported for either the sample or field duplicate sample (QC-1).

4 Results for m,p-Xylenes and o-Xylenes are shown separately.

5 Diesel results exhibit fuel pattern not resembling standard

PLATES



SOURCE: THOMAS BROTHERS ALAMEDA/CONTRA COSTA COUNTIES STREET GUIDE; 1995

N

2000 0 2000 4000

APPROXIMATE SCALE IN FEET

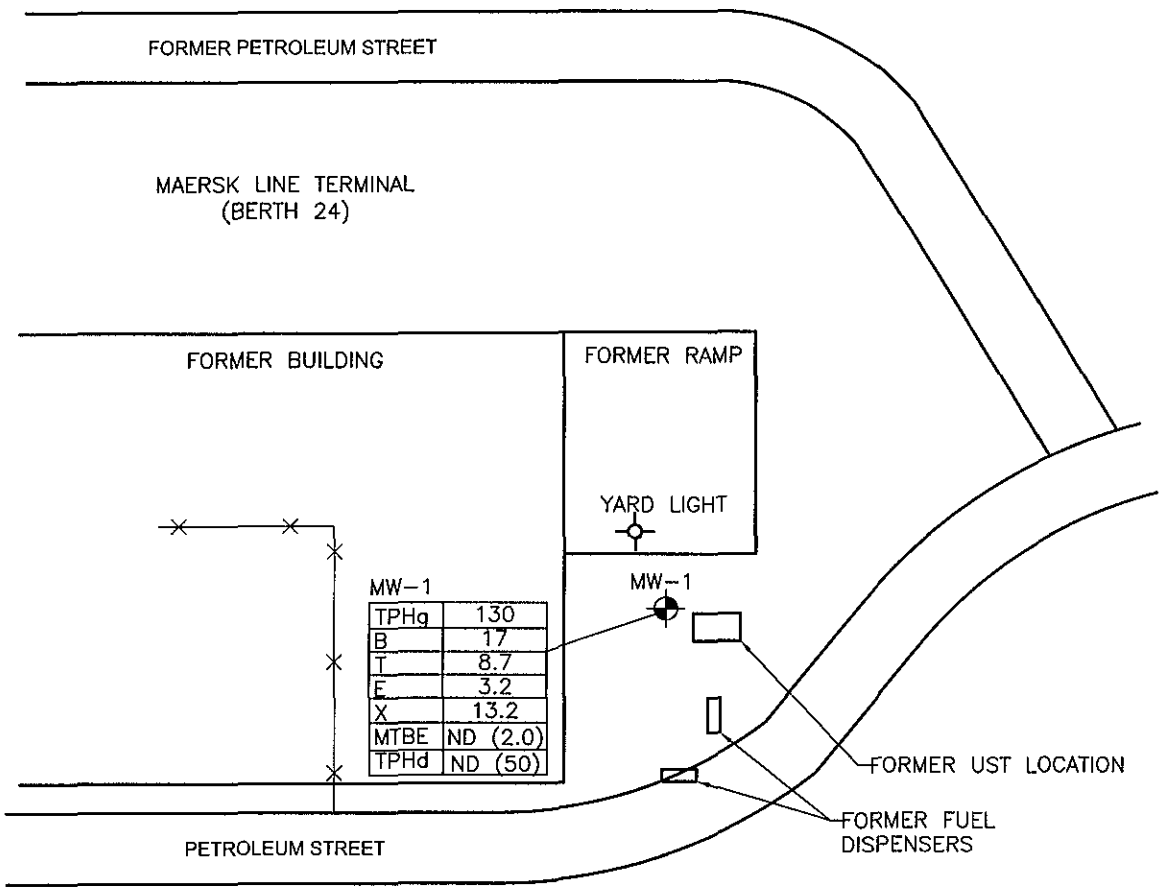
50841001.DWG 1.0
20010815.1439

Harding ESE
A MACTEC COMPANY

Vicinity Map
801 Maritime Street
Oakland, California
Port of Oakland

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	50841 1		8/2001	



LEGEND

MW-1 ⊕	MONITORING WELL
TPHg	TPH AS GASOLINE (in µg/L)
B	BENZENE (in µg/L)
T	TOULENE (in µg/L)
E	ETHYLBENZENE (in µg/L)
X	XYLENES (in µg/L)
MTBE	METHYL T-BUYTL ETHER (in µg/L)
TPHd	TPH AS DIESEL (in µg/L)

N

100 0 100 200

APPROXIMATE SCALE IN FEET

50841002.DWG 1.0
20010815.1446

Harding ESE

Laboratory Results for Petroleum Hydrocarbons
July 27, 2001
801 Maritime Street
Oakland, California
Port of Oakland

PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	50841 1		8/2001	

APPENDIX A

LABORATORY REPORT

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

ANALYTICAL REPORT

Prepared for:

Harding Lawson Associates
600 Grand Ave.
Suite 300
Oakland, CA 94610

Date: 08-AUG-01
Lab Job Number: 153273
Project ID: 50841.1
Location: Port-801 Maritime

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number: 153273
Client: Harding ESE
Location: Port-801 Maritime
Project#: 50841.1

Receipt Date: 07/26/01

CASE NARRATIVE

This hardcopy data package contains sample and QC results for one water sample that was received on July 26, 2001. The sample was received cold and intact.

TVH/BTXE: No analytical problems were encountered.

Total Extractable Hydrocarbons: Low surrogate recovery was observed in the method blank (QC151708) for batch 65306. This outlier should have no impact on the data, as the surrogate for the sample as well as all other QC samples are within acceptance criteria. No other analytical problems were encountered.

Total Dissolved Solids: No analytical problems were encountered.

153273

Harding ESE
A MACTEC COMPANY
600 Grand Ave, Suite 300
Oakland, CA 94610
(510) 451-1001

CHAIN OF CUSTODY FORM

Seq. No.: Nº 10541

Lab: C&T

Samplers: Trish Eliasson

Job Number: 50841.1

Name/Location: Port - 801 Maritime

Project Manager: Luis Fraticelli

Recorder: Trish Eliasson (Signature Required)

MATRIX			#CONTAINERS & PRESERV.					SAMPLE NUMBER		DATE				STATION DESCRIPTION	
Water	Soil	Air	Unpres	H_2SO_4	HNO_3	HCL	TB	YR	SEQ	YR	MO	DAY	TIME		DEPTH
X			2			34		MW-1		01	07	26	1010		

ANALYSIS REQUESTED								
Gasoline Range Organics 8015B	Diesel Range Organics 8015B	BTEX plus MTBE	CCR Title 22 Metals (17)	EPA 8021B	EPA 8260B	EPA 8270C	TDS	
X	X	X					X	

ADDITIONAL INFORMATION

SAMPLE NUMBER		TURNAROUND TIME/REMARKS
YR	SEQ	
		TPHd with Silica gel cleanup
		Standard TAT

CHAIN OF CUSTODY RECORD

Relinquished By (signature)	Trish Eliasson (Print Name)	Harding ESE (Company)	7/26 Date/Time
Received By (signature)	George Lumbos (Print Name)	Curtis & Tompkins (Company)	7/26 1:05 Date/Time
Relinquished By (signature)	(Print Name)	(Company)	Date/Time
Received By (signature)	(Print Name)	(Company)	Date/Time
Relinquished By (signature)	(Print Name)	(Company)	Date/Time
Received By (signature)	(Print Name)	(Company)	Date/Time
Received By (signature)	(Print Name)	(Company)	Date/Time

Method of Shipment

Laboratory Copy Project Office Copy Field or Office Copy

00291 1

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	50841.1	Analysis:	EPA 8015M
Field ID:	MW-1	Batch#:	65290
Matrix:	Water	Sampled:	07/26/01
Units:	ug/L	Received:	07/26/01
Diln Fac:	1.000	Analyzed:	07/27/01

Type: SAMPLE Lab ID: 153273-001

Analyte	Result	RL
Gasoline C7-C12	130	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	59-135
Bromofluorobenzene (FID)	98	60-140

Type: BLANK Lab ID: QC151628

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	101	60-140

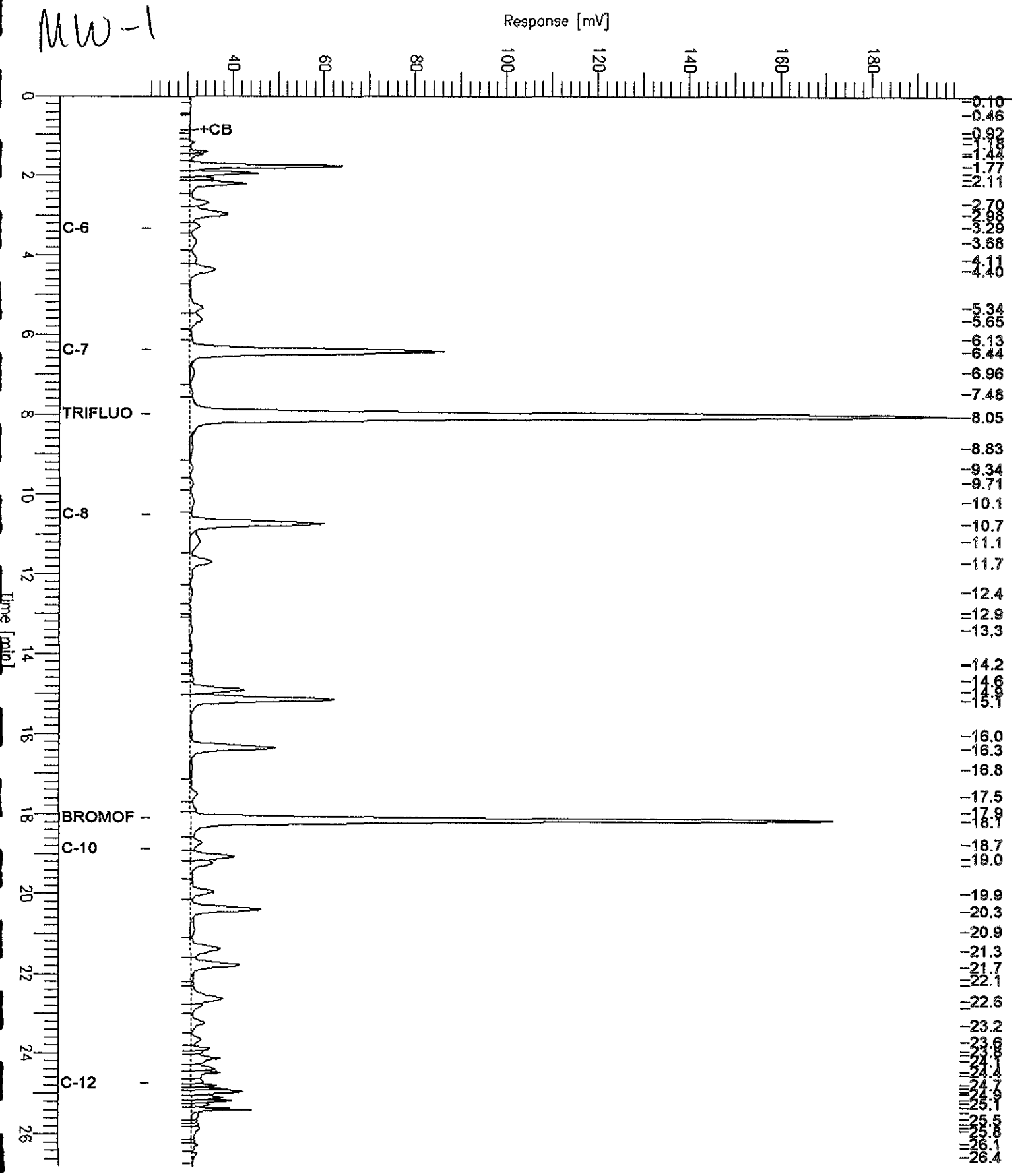
ND= Not Detected
RL= Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 153273-001,65290,+MTBE
FileName : G:\GC19\DATA\208X019.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 22 mV

Sample #: A1 Page 1 of 1
Date : 7/28/01 12:03 AM
Time of Injection: 7/27/01 11:36 PM
Low Point : 21.91 mV High Point : 199.72 mV
Plot Scale: 177.8 mV

MW-1

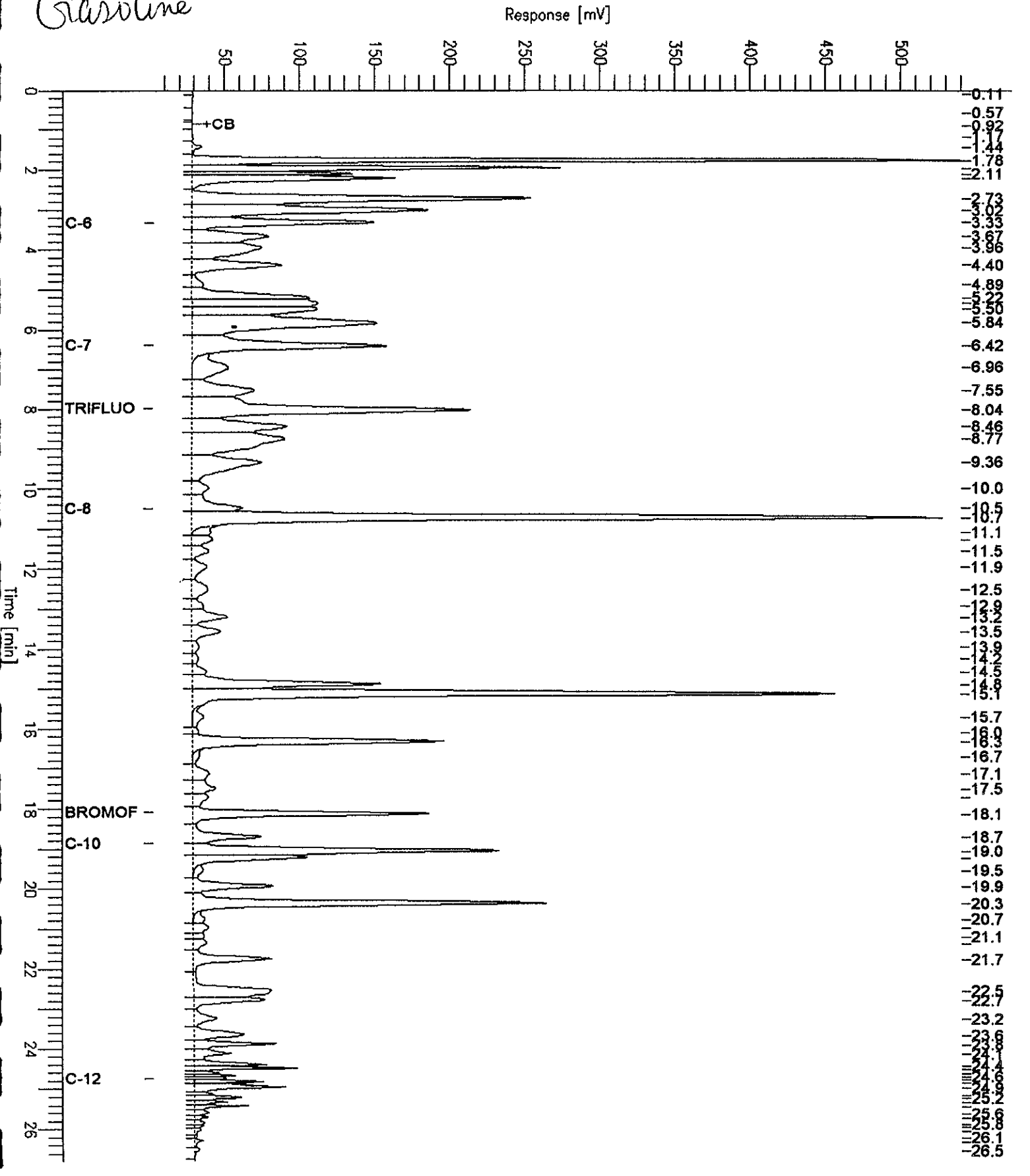


GC19 TVH 'X' Data File (FID)

Sample Name : CCV/LCS,QC151629,65290,01WS1503,5/5000
FileName : G:\GC19\DATA\208X003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 3 mV

Sample #: Page 1 of 1
Date : 7/27/01 02:02 PM
Time of Injection: 7/27/01 01:25 PM
Low Point : 2.96 mV High Point : 541.14 mV
Plot Scale: 538.2 mV

Gasoline



Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	50841.1	Analysis:	EPA 8021B
Field ID:	MW-1	Batch#:	65290
Matrix:	Water	Sampled:	07/26/01
Units:	ug/L	Received:	07/26/01
Diln Fac:	1.000	Analyzed:	07/27/01

Type: SAMPLE Lab ID: 153273-001

Analyte	Result	RL
MTBE	ND	2.0
Benzene	17	0.50
Toluene	8.7	0.50
Ethylbenzene	3.2	0.50
m,p-Xylenes	8.7	0.50
o-Xylene	5.5	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	101	56-142
Bromofluorobenzene (PID)	103	55-149

Type: BLANK Lab ID: QC151628

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	101	56-142
Bromofluorobenzene (PID)	103	55-149

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	50841.1	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC151629	Batch#:	65290
Matrix:	Water	Analyzed:	07/27/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,792	90	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	134	59-135
Bromofluorobenzene (FID)	109	60-140

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	50841.1	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	65290
Units:	ug/L	Analyzed:	07/27/01
Diln Fac:	1.000		

Type: BS Lab ID: QC151632

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.13	101	51-125
Benzene	20.00	19.12	96	67-117
Toluene	20.00	20.30	101	69-117
Ethylbenzene	20.00	19.81	99	68-124
m,p-Xylenes	40.00	40.69	102	70-125
o-Xylene	20.00	19.79	99	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	56-142
Bromofluorobenzene (PID)	105	55-149

Type: BSD Lab ID: QC151677

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.88	99	51-125	1	20
Benzene	20.00	18.93	95	67-117	1	20
Toluene	20.00	19.83	99	69-117	2	20
Ethylbenzene	20.00	19.78	99	68-124	0	20
m,p-Xylenes	40.00	40.16	100	70-125	1	20
o-Xylene	20.00	19.76	99	65-129	0	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	103	56-142
Bromofluorobenzene (PID)	103	55-149

PD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	50841.1	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	65290
MSS Lab ID:	153269-001	Sampled:	07/26/01
Matrix:	Water	Received:	07/26/01
Units:	ug/L	Analyzed:	07/28/01
Diln Fac:	1.000		

Type: MS Lab ID: QC151745

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,560	78	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	59-135
Bromofluorobenzene (FID)	107	60-140

Type: MSD Lab ID: QC151746

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,589	79	65-131	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	59-135
Bromofluorobenzene (FID)	107	60-140

PD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 3520
Project#:	50841.1	Analysis:	EPA 8015M
Field ID:	MW-1	Sampled:	07/26/01
Matrix:	Water	Received:	07/26/01
Units:	ug/L	Prepared:	07/27/01
Diln Fac:	1.000	Analyzed:	07/31/01
Batch#:	65306		

Type: SAMPLE — Cleanup Method: EPA 3630C
Lab ID: 153273-001

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	52	44-121

Type: BLANK — Cleanup Method: EPA 3630C
Lab ID: QC151708

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	32 *	44-121

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 3520
Project#:	50841.1	Analysis:	EPA 8015M
Matrix:	Water	Batch#:	65306
Units:	ug/L	Prepared:	07/27/01
Diln Fac:	1.000	Analyzed:	07/30/01

Type: BS Cleanup Method: EPA 3630C
Lab ID: QC151709

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,339	1,896	81	45-110

Surrogate	%REC	Limits
Hexacosane	44	44-121

Type: BSD Cleanup Method: EPA 3630C
Lab ID: QC151710

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,339	2,327	100	45-110	20	22

Surrogate	%REC	Limits
Hexacosane	57	44-121

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Dissolved Solids (TDS)

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	METHOD
Project#:	50841.1	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	65391
Field ID:	MW-1	Sampled:	07/26/01
Matrix:	Water	Received:	07/26/01
Units:	mg/L	Analyzed:	07/30/01

Type	Lab ID	Result	RL	Dil Fac
SAMPLE	153273-001	1,880	13	1.300
BLANK	QC152059	ND	10	1.000

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Dissolved Solids (TDS)

Lab #:	153273	Location:	Port-801 Maritime
Client:	Harding Lawson Associates	Prep:	METHOD
Project#:	50841.1	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	65391
Field ID:	MW-1	Sampled:	07/26/01
MSS Lab ID:	153273-001	Received:	07/26/01
Matrix:	Water	Analyzed:	07/30/01
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim	Dil Fac
BS	QC152060		10,000	10,140		101	80-120			1.000
BSD	QC152061		10,000	9,980		100	80-120	2	20	1.000
SDUP	QC152062	1,880		1,890	13			1	20	1.300
SSPIKE	QC152063	1,880	1,250	3,150		102	70-130			1.300

RL= Reporting Limit
RPD= Relative Percent Difference