

Case # 2

Gas Contaminated
Soil

Case #2

Incoming
Results

05/21/91 11:41 4157770107 CONVERSE ST SHELL SAN BRUNO 2002

CONVERSE ENVIRONMENTAL WEST

55 Hawthorne Street, Suite 500
San Francisco, California 94105-3906

Telephone 415 543-4200
FAX 415 777-3157



91-44-671-01-1238
May 21, 1991

Mr. Michael Clark
Shell Oil Company
1150 Bayhill Drive, Suite 200
P.O. Box 5500
San Bruno, CA 94066

Subject: Results of Soil Stockpile Analyses
390 Hickey Blvd., Daly City

Dear Michael;

Enclosed are the laboratory reports from the analyses of soil samples from the soil stockpiles at the site. Also enclosed is a sketch map showing the locations of the composited soil samples and the results for total petroleum hydrocarbons as gasoline (TPH-g) analyses for each composite sample.

The small soil pile (approximately 40 yd³) contained no detectable TPH-g or benzene, toluene, ethylbenzene, or xylenes (BTEX). I spoke with Mr. Dermott Casey, San Mateo Department of Health Services, this afternoon in regards to this soil pile. He said that it is permissible to put this soil back into the ground since no TPH-g or BTEX was detected.

Sincerely Yours,

Converse Environmental West

Jay A. Ach
Project Geologist

Enclosures



NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc. 435 Tescurii Circle Santa Rosa, CA 95401 Tel: (707) 526-7200 Fax: (707) 526-9623

Jay Ach Converse Consultants 55 Hawthorne St, Ste 500 San Francisco, CA 94105

Date: 05-16-91 NET Client Acct No: 18.02 NET Pacific Log No: 7350 Received: 05-04-91 1100

Client Reference Information

SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-01

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

[Signature] Jules Skamarack Laboratory Manager

JS:rdc Enclosure(s)

NET

NET Pacific, Inc.

Client No: 18.02
Client Name: Converse Consultants
NET Log No: 7350

Date: 05-16-91

Page: 2

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-01

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	SP A 1,2,9	SP A 3,4,8	Units
			05-03-91 1105	05-03-91 1139-1242	
			85003	85004	
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1000	1000	
DATE ANALYZED			05-15-91	05-15-91	
METHOD GC FID/5030			--	--	
as Gasoline	1		2,900	3,600	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			1000	1000	
DATE ANALYZED			05 15 91	05 15-91	
Benzene	2.5		16,000	23,000	ug/Kg
Ethylbenzene	2.5		41,000	49,000	ug/Kg
Toluene	2.5		110,000	140,000	ug/Kg
Xylenes, total	2.5		370,000	330,000	ug/Kg

NET

NET Pacific, Inc.

Client No: 18.02
Client Name: Converse Consultants
NET Log No: 7350

Date: 05-16-91

Page: 3

Ret: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-01

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	SP A 5,6,7	SP B 10,11	Units
			05-03-91 1210-1235	05-03-91 1440-1450	
			85005	85006	
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			100	1	
DATE ANALYZED			05-14-91	05-14-91	
METHOD GC FID/5030			--	--	
as Gasoline		1	820	ND	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			100	1	
DATE ANALYZED			05-14-91	05-14-91	
Benzene		2.5	560	ND	ug/Kg
Ethylbenzene		2.5	1,500	ND	ug/Kg
Toluene		2.5	7,400	ND	ug/Kg
Xylenes, total		2.5	14,000	ND	ug/Kg



NET Pacific, Inc.

Client No: 18.02
 Client Name: Converse Consultants
 NET Log No: 7350

Date: 05-16-91

Page: 4

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-01

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	tank 1 W end	tank 2 W end	Units
			05-03-91 1403	05-03-91 1406	
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			05-13-91	05-13-91	
METHOD GC FID/5030			--	--	
as Gasoline		1	ND	ND	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			1	1	
DATE ANALYZED			05-13-91	05-13-91	
Benzene		2.5	4.3	13	ug/Kg
Ethylbenzene		2.5	2.3	ND	ug/Kg
Toluene		2.5	6.4	7.7	ug/Kg
Xylenes, total		2.5	16	11	ug/Kg



Client No: 18.02
 Client Name: Converse Consultants
 NET Log No: 7350

Date: 05-16-91

Page: 5

NET Pacific, Inc.

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-01

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	tank 3 W end tank 4 W end		Units
			05-03-91 1412	05-03-91 1416	
		85009	85010		
PETROLEUM HYDROCARBONS		--	--		
VOLATILE (SOIL)		--	--		
DILUTION FACTOR *		1	1		
DATE ANALYZED		05-13-91	05-13-91		
METHOD GC FID/5030		--	--		
as Gasoline	1	3.6	2.2		mg/Kg
METHOD 8020		--	--		
DILUTION FACTOR *		1	1		
DATE ANALYZED		05-13-91	05-13-91		
Benzene	2.5	170	90		ug/Kg
Ethylbenzene	2.5	77	13		ug/Kg
Toluene	2.5	42	15		ug/Kg
Xylenes, total	2.5	600	180		ug/Kg



NET Pacific, Inc.

Client No: 18.02
 Client Name: Converse Consultants
 NET Log No: 7350

Date: 05-16-91

Page: 6

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-01

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	85011	Units
<p>tank 4 E end 05-03-91 1430</p>				
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			05-13-91	
METHOD GC FID/5030			--	
as Gasoline	1		2.2	mg/Kg
METHOD 8020			--	
DILUTION FACTOR *			1	
DATE ANALYZED			05-13-91	
Benzene	2.5		170	ug/Kg
Ethylbenzene	2.5		58	ug/Kg
Toluene	2.5		38	ug/Kg
Xylenes, total	2.5		440	ug/Kg



Client Acct: 18.02
 Client Name: Converse Consultants
 NET Log No: 7350

Date: 05-16-91
 Page: 7

NET Pacific, Inc.

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-01

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verif Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Benzene	2.5	ug/Kg	95	ND	100	102	2.0
Toluene	2.5	ug/Kg	105	ND	98	100	2.0
Gasoline	1	mg/Kg	97	ND	86	83	3.5
Benzene	2.5	ug/Kg	112	ND	95	93	2.5
Toluene	2.5	ug/Kg	118	ND	93	92	1.0

COMMENT: Blank Results were ND on other analytes tested.



NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; when appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- * : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference, $100 \text{ [Value 1 - Value 2] / mean value}$.
- SNA : Standard not available.
- ug/Kg (PPb) : Concentration in units of micrograms of analyte per kilogram of sample, (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

Method References

- Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.
- Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.
- Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.
- SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

05/21/91

STELL SAN DRUM

CONVERSE ST

05/21/91

17:44

05/21/91



CONVERSE ENVIRONMENTAL WEST

CHAIN OF CUSTODY RECORD

water, soils: 7350
water: 7147 (240)
P.M. JAY

PROJECT NO.: 91-44-867-01				PROJECT NAME / CROSS STREET: 390 HIGHWAY BLVD				NUMBER OF CONTAINERS	ANALYSES				REMARKS	
SAMPLERS: (Signature) Charles Bunn				DALY CITY					TPH-G	PAH	BTEX			
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION									
	5/19/91	1105		X	Stock Pile A Sample 1			1	X	X			BRASS SOIL LINDERS S.T.A.I.T.	
		1130		X	✓	✓	2	1	X	X			Composite 1, 2, 9 Seals, 9 Detection TPH-G = 1PAH BTEX = 0.00	
		1139		X	✓	✓	3	1	X	X			comp 4, 3, 8	
		1200		X	✓	✓	4	1	X	X			comp 4, 3, 8 4/7/91 ALL SOIL SAMPLES STOCK	
		1210		X	✓	✓	5	1	X	X			CALL JAY NOW FOR A	
		1220		X	✓	✓	6	1	X	X			COMPOSITE DETAILS	
		1235		X	✓	✓	7	1	X	X			to me	
		1242		X	✓	✓	8	X	X	X			comp 4, 3, 8	
		1250		X	✓	✓	9	1	X	X			comp 1, 2, 9	
		1440		X	Stock Pile B ✓			10	1	X	X			COMPOSITE TO 1 SAMPLE
		1450		X	Stock Pile B ✓			11	1	X	X			CUSTODY SEALED 5/13/91
		1403		X	TRUCK No 1 "W" EXOS				1	X	X			@ 19:30 J.W.
	5/19/91	1400		X	TRUCK No 2 "W" EXOS				1	X	X			Submitt. etc.

RELINQUISHED BY: (Signature) Charles Bunn	DATE: 5/13/91 TIME: 17:50	RECEIVED BY: (Signature) Jeff Winkler	RELINQUISHED BY: (Signature) Jeff Winkler	DATE: 5/13 TIME: 19:20	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY COURIER: (Sign.)	DATE: TIME:	RECEIVED BY MOBILE LAB: (Sign.)	RELINO. BY MOBILE LAB: (Signature)	DATE: TIME:	RECEIVED BY COURIER: (Signature)
METHOD OF SHIPMENT NCS		SHIPPED BY: (Signature)	RECEIVED FOR LAB: (Signature) Example	DATE: 5/4/91 TIME: 1700	COURIER FROM AIRPORT: (Signature)



CHAIN OF CUSTODY RECORD

PROJECT NO.:				PROJECT NAME / CROSS STREET:				NUMBER OF CONTAINERS	ANALYSES		REMARKS
SAMPLERS: (Signature)									TAP-G	BTEX	
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION						
	9/11	1412			TANK No 3 "W" EXD	1	X	X			
		1416			TANK No 4 "W" EXD	1	X	X			
		1430			TANK No 4 "E" EXD	1	X	X		7350	
		1440			AUGER WASH WATER (VOA)	4				HOLD CALL SAY AHH	
	5/31	1300			TANK PIT EXCAVATION (VOA)	4	X	X		TRAPPER WATER IN PIT. NOT GRABED UNTIL 24 HR. TURN AROUND (7:35) 7347	

WATER DETECTION LIMIT
 TAP-G 0.05 PPM
 BTEX 0.0005 PPM

RELINQUISHED BY: (Signature)	DATE: 5/3/91	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE: 5-13	RECEIVED BY: (Signature)
<i>Charles Brown</i>	TIME: 17:50	<i>Jeff Winkler</i>	<i>Jeff Winkler</i>	TIME: 19:30	
RELINQUISHED BY: (Signature)	DATE:	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE:	RECEIVED BY: (Signature)
	TIME:			TIME:	
RELINQUISHED BY COURIER: (Sign.)	DATE:	RECEIVED BY MOBILE LAB: (Sign.)	RELINO. BY MOBILE LAB: (Signature)	DATE:	RECEIVED BY COURIER: (Signature)
	TIME:			TIME:	
METHOD OF SHIPMENT		SHIPPED BY: (Signature)	RECEIVED FOR LAB: (Signature)	DATE: 5-4-91	COURIER FROM AIRPORT: (Signature)
NCS			<i>W. Conner</i>	TIME: 11:00	

WIC 110-111
 PAGE 2 of 2
 CONVERSE ST
 05/21/91 17:45
 CONVERSE ST
 WIC 110-111

SHELL INVOICE COVER SHEET

7350
7351

Shell Site Address: **390 HICKEY**
City, State: **DALY CITY, CALIF**
WIC No.: **1920-1101**

Invoice No.:
Invoice Date:
Consultant: **Converse Environmental West**
Blanket P.O. No.: **MOH-B-436A**

Description of Work Performed: **EXCAVATING SOIL AWAY FROM TANKS FOR ~~SOIL~~ REMOVAL. SAMPLED SOIL STOCKPILE. SAMPLE BOTTOM EXCAVATIONS. SAMPLED WATER IN EXCAVATION [NOT GROUND WATER]**

CODING	Class Type	Amount
Environmental Compliance	5460	
Site Investigation/Assessment	5441	
Contaminated Soil Disposal	5442	
Contaminated Water Disposal	5443	
Contaminated Soil Remediation	5452	
Contaminated Water Remediation	5453	
Site Monitoring	5461	
Car Wash Sludge Disposal	5411	
Tank Water Bottoms	5408	
Other:		
Other:		
Capital ADC: 205620 AFE No.:		
TOTAL-PAY THIS AMOUNT		\$0.00

Sub-Account Coding (circle one)

Disposable Property	1140
Holding Property	1150
Relinquishment	1180
Salary Operation	2030
Lease Operation	3050
Open Dealer	4050
Dealer Lease Operation	5050

Shell Approval
Signature:
Date:

Converse
Composite scheme for 390 Hickey Blvd
7350 &

Comp Stockpile A 1, 2, 9
3, 4, 8
5, 6, 7

Stockpile B 10, 11

Stockpile "C" 35, 36, 37

33, 34, 29

30, 31, 32

25, 26, 27

Gas/BTEX all

23, 24, 28

Hold sample for further.



NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc. 435 Tesconi Circle Santa Rosa, CA 95401 Tel: (707) 526-7200 Fax: (707) 526-9623

Jay Ach Converse Consultants 55 Hawthorne St, Ste 500 San Francisco, CA 94105

Date: 05-16-91 NET Client Acct No: 18.02 NET Pacific Log No: 7464 Received: 05-08-91 0800

Client Reference Information

SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-20

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

[Signature] Jules Skamarack Laboratory Manager

JS:rct Enclosure(s)



Client No: 18.02
 Client Name: Converse Consultants
 NET Log No: 7464

Date: 05-16-91
 Page: 2

NET Pacific, Inc.

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-20

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	SP C 23,4,8	SP C 25,6,7	Units
			05-07-91 1110-1200	05-07-91 1130-1150	
			85013	85014	
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			100	200	
DATE ANALYZED			05-14-91	05-15-91	
METHOD GC FID/5030			--	--	
as Gasoline	1		490	530	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			100	200	
DATE ANALYZED			05-14-91	05-15-91	
Benzene	2.5		1,400	1,900	ug/Kg
Ethylbenzene	2.5		5,800	7,600	ug/Kg
Toluene	2.5		14,000	20,000	ug/Kg
Xylenes, total	2.5		44,000	50,000	ug/Kg



NET Pacific, Inc.

Client No: 18.02
 Client Name: Converse Consultants
 NET Log No: 7464

Date: 05-16-91

Page: 3

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-20

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results		Units
			SP C 29,33,4 05-07-91 1210-1306	SP C 30,1,2 05-07-91 1220-1240	
			85015	85016	
PETROLEUM HYDROCARBONS			--	--	
VOLATILE (SOIL)			--	--	
DILUTION FACTOR *			100	100	
DATE ANALYZED			05-14-91	05-15-91	
METHOD GC FID/5030			--	--	
as Gasoline		1	190	260	mg/Kg
METHOD 8020			--	--	
DILUTION FACTOR *			100	10	
DATE ANALYZED			05-14-91	05-14-91	
Benzene		2.5	210	500	ug/Kg
Ethylbenzene		2.5	2,100	2,400	ug/Kg
Toluene		2.5	2,900	4,900	ug/Kg
Xylenes, total		2.5	13,000	20,000	ug/Kg

NET

NET Pacific, Inc.

Client No: 18.02
 Client Name: Converse Consultants
 NET Log No: 7464

Date: 05-16-91

Page: 4

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-20

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	85017	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (SOIL)			--	
DILUTION FACTOR *			200	
DATE ANALYZED			05-15-91	
METHOD GC FID/5030			--	
as Gasoline	1		980	mg/Kg
METHOD 8020			--	
DILUTION FACTOR *			200	
DATE ANALYZED			05-15-91	
Benzene	2.5		1,400	ug/Kg
Ethylbenzene	2.5		7,400	ug/Kg
Toluene	2.5		20,000	ug/Kg
Xylenes, total	2.5		76,000	ug/Kg

SP C 35,6,7
 05-07-91
 1310-1330

NET

Client Acct: 18.02
 Client Name: Converse Consultants
 NET Log No: 7464

Date: 05-16-91
 Page: 5

NET Pacific, Inc.

Ref: SHELL, 390 Hickey Blvd., Daly City; Project: 91-44-867-20

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verif Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	1	mg/Kg	106	ND	84	102	20
Benzene	2.5	ug/Kg	98	ND	83	97	16
Toluene	2.5	ug/Kg	112	ND	84	97	14
Gasoline	1	mg/Kg	97	ND	103	93	10
Benzene	2.5	ug/Kg	99	ND	104	95	9.0
Toluene	2.5	ug/Kg	114	ND	106	97	7.1

COMMENT: Blank Results were ND on other analytes tested.

05/21/91 11:47 410770107
NET

NET Pacific, Inc.

KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- * : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference, $100 \frac{|\text{Value 1} - \text{Value 2}|}{\text{mean value}}$.
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.



CONVERSE ENVIRONMENTAL WEST

CHAIN OF CUSTODY RECORD

7392

1990-1101

1072

SHELL

P.M. Jay

PROJECT NO.: 91-44-847-20				PROJECT NAME / CROSS STREET: 390 HICKLEY BLVD DAILY CITY		NUMBER OF CONTAINERS	ANALYSES				REMARKS S.T.A.T. SOIL IN BRASS LINERS CALL JAY @ 415-5434200 FOR ANALYSES & COMPOSITE DATA ON # 23 TO # 37 see attached for compositing scheme per JA to LP 5/10/91 (CUSTODY SEALED 5/7/91 @ 1400 MW seal intact)
SAMPLERS: (Signature) Chuck Bunn							TPH/G	BTEX			
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION						
	5/7/91	1110		X	Stack Pile C # 23	1			comp w/29		
		1120		X	# 24	1			} comp		
		1130		X	# 25	1					
		1140		X	# 26	1					
		1150		X	# 27	1					
		1200		X	# 28	1		comp w/29, 31, 34			
		1210		X	# 29	1		comp w/33, 34			
		1220		X	# 30	1					
		1230		X	# 31	1		comp			
		1240		X	# 32	1					
		1250		X	# 33	1		comp w/29			
		1300		X	# 34	1					
	5/7/91	1310		X	# 35	1		comp w/ 30, 31			

RELINQUISHED BY: (Signature) Chuck Bunn	DATE: 5/7/91 TIME: 1040	RECEIVED BY: (Signature) M. J. ...	RELINQUISHED BY: (Signature) M. J. ...	DATE: 5/7/91 TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE: TIME:	RECEIVED BY: (Signature)
RELINQUISHED BY COURIER: (Sign.)	DATE: TIME:	RECEIVED BY MOBILE LAB: (Sign.)	RELINQ. BY MOBILE LAB: (Signature)	DATE: TIME:	RECEIVED BY COURIER: (Signature)
METHOD OF SHIPMENT WCS		SHIPPED BY: (Signature)	RECEIVED FOR LAB: (Signature) K. ...	DATE: 5-8-91 TIME: 0800	COURIER FROM AIRPORT: (Signature)

15-17760

SHELL INVOICE COVER SHEET

Shell Site Address: 390 Hickey Blvd

City, State: DULY CITY CAL

WIC No.: 1990-1101

A STA 1

Invoice No.:

Invoice Date:

Consultant: Converse Environmental West

Blanket P.O. No.: MOH-B-436A

Description of Work Performed:

15 SAMPLES OF EXCAVATION SOIL STOCK PILE (C)
 8 SAMPLES FROM BOTTOM OF PRODUCT TRENCHES

CODING	Class Type	Amount
Environmental Compliance	5460	
Site Investigation/Assessment	5441	
Contaminated Soil Disposal	5442	
Contaminated Water Disposal	5443	
Contaminated Soil Remediation	5452	
Contaminated Water Remediation	5453	
Site Monitoring	5461	
Car Wash Sludge Disposal	5411	
Tank Water Bottoms	5408	
Other:		
Other:		
Capital ADC: 205620 AFE No.:		
TOTAL-PAY THIS AMOUNT		\$0.00

Sub-Account Coding (circle one)

Disposable Property	1140
Holding Property	1150
Relinquishment	1180
Salary Operation	2030
Lease Operation	3050
Open Dealer	4050
Dealer Lease Operation	5050

Shell Approval

Signature:

Date:

SHELL INVOICE COVER SHEET

Shell Site Address: **390 Hickey Blvd** Invoice No.:
 City, State: **DAV CITY CAL** Invoice Date:
 WIC No.: **1990-1101** Consultant: **Converse Environmental West**
 Blanker P.O. No.: **MOH-B-436A**

5/16/90

Description of Work Performed: **24 TANK BOTTOMS FOR BOTTOM EXCAVATION SAMPLES, FORMER TANK FARM.**

6 SAMPLES

CODING	Class Type	Amount
Environmental Compliance	5460	
Site Investigation/Assessment	5441	
Contaminated Soil Disposal	5442	
Contaminated Water Disposal	5443	
Contaminated Soil Remediation	5452	
Contaminated Water Remediation	5453	
Site Monitoring	5461	
Car Wash Sludge Disposal	5411	
Tank Water Bottoms	5408	
Other:		
Other:		
Capital ADC: 205620 AFE No.:		
TOTAL-PAY THIS AMOUNT		\$0.00

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Disposable Property	1140
Holding Property	1150
Relinquishment	1180
Salary Operation	2030
Lease Operation	3050
Open Dealer	4050
Dealer Lease Operation	5050

Shell Approval

Signature: _____

Date: _____

Converse

Composite scheme for 390 Hickory Blvd
7350 &

Comp Stockpile A 1, 2, 9
3, 4, 8
5, 6, 7

Stockpile B 10, 11

Stockpile "C" 35, 36, 37

33, 34, 29

30, 31, 32

25, 26, 27

Gas/BTEX all 23, 24, 28

Hold sample for further.

Client Acct: 18.02
 Client Name: Converse Consultants
 NET Log No: 7819

Date: 06-03-91
 Page: 2

Ref: SHELL-390 Hickey Blvd., Daly City

SAMPLE DESCRIPTION: S-1-3 Comp 05-31-91 1240-1300
 LAB Job No: (-87131)

Parameter	Method	Reporting Limit	Results	Units
pH-Corrosivity	150.1	N/A	8.2	pH units
Flashpoint	1010	--	< 100	deg C
Sulfide, Total	9030	10	ND	mg/Kg
Cyanide (total)	9010	0.50	ND	mg/Kg
17 CAM Metals, Total				
			TCLP	
Antimony	6010	10	ND	NO mg/Kg
Arsenic	7060	0.5	2.7 OK	NO mg/Kg
Barium	6010	2	46 OK	NO mg/Kg
Beryllium	6010	2	ND	mg/Kg
Cadmium	6010	2	ND	mg/Kg
Chromium (VI)	7197	0.5	ND	mg/Kg
Chromium	6010	2	26 - OK	NO mg/Kg
Cobalt	6010	5	8.0 - OK	NS mg/Kg
Copper	6010	2	11 - OK	NS mg/Kg
Lead	7421	0.25	3.5 OK	NO mg/Kg
Mercury	7471	0.1	ND	mg/Kg
Molybdenum	6010	5	ND	mg/Kg
Nickel	6010	5	28 OK	NS mg/Kg
Selenium	7740	0.5	ND	mg/Kg
Silver	6010	2	ND	mg/Kg
Thallium	6010	20	ND	mg/Kg
Vanadium	6010	5	20 OK	NS mg/Kg
Zinc	6010	2	24 OK	NS mg/Kg
WET Sol.				
Lead (EPA 7421)	7421	0.002	0.022	mg/L

HSE NO STANDARD

Soil is OK
 no Title 22
 problem or
 TCLP
 problem
 WTC
 06/07/91

Completed
Results

CHROMALAB, INC.

5 DAYS TURNAROUND

Analytical Laboratory (E694)

August 26, 1991

ChromaLab File No.: 0891155

BAY AREA TANK & MARINE, INC.

Attn: Forrest CanuttRE: Ten composited soil samples for Gasoline/BTEX analysis

Project Name: SHELL - DALY CITY

Project Number: 2235

Date Sampled: August 16, 1991

Date Submitted: August 19, 1991

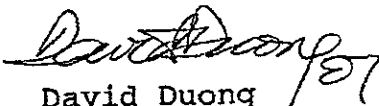
Date Extracted: Aug. 23-26, 1991

Date Analyzed: Aug. 23-26, 1991

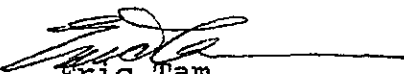
RESULTS:

Sample I.D.	Gasoline (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)
1 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
2 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
3 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
4 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
5 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
6 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
7 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
8 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
9 - A-D	N.D.	N.D.	N.D.	N.D.	N.D.
10- A-D	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	83.0%	87.4%	86.6%	87.9%	87.7%
DUP SPIKE REC.	104.9%	81.7%	94.7%	91.9%	90.9%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/ 8015	8020	8020	8020	8020

ChromaLab, Inc.



David Duong
Chief Chemist



Eric Tam
Laboratory Director

Case #3

Oil + grease
and
Diesel Fuel
Contamination

Incoming
Results



November 16, 1990
Revised November 19, 1990

4022,299.03

San Mateo County Department of Health Services
Office of Environmental Health
590 Hamilton Street
Redwood City, California 94063

Attention: Mr. Jorge Gomar

Gentlemen:

Remediation and Disposal of Excavated Material
Shell Service Station
679 Hickey Boulevard
Pacifica, California

This letter presents two alternatives developed by Harding Lawson Associates (HLA) for the remediation of soils excavated from a Shell Oil Station at 679 Hickey Boulevard in Pacifica, California. HLA directed the removal of the three hydraulic hoists and waste oil tank at the site, and excavation was completed on November 14, 1990. Soils containing oil were stockpiled on site, awaiting remediation. This letter is written at the request of Mr. Jorge Gomar of the San Mateo County Department of Health Services (SMCDHS).

Removal of the three hydraulic hoists and waste oil tank generated approximately 40 and 65 cubic yards of material, respectively. These materials have been stockpiled on site in two separate piles and covered with plastic sheeting. Under the direction Mr. Jorge Gomar, HLA sampled the stockpiles, taking one composite sample from the waste oil stockpile, and four discrete samples from the hoist stockpile. Samples were analyzed for total oil and grease (TOG), using EPA Methods 503D & 503E; total petroleum hydrocarbons (TPH) as gasoline and diesel fuel; benzene, toluene, ethylbenzene, and xylenes (BTEX); and total lead. Table 1 presents the results of analyses.

Results of chemical analysis on soil from the hydraulic hoist stockpile (approximately 40 cubic yards) indicated TOG concentrations of up to 270 parts per million (ppm). Results of

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Revised November 19, 1990
4022,299.03
Mr. Jorge Gomar
San Mateo County Department of Health Services
Page 2

Harding Lawson Associates

analyses on samples from the waste oil tank stockpile (60 cubic yards) show TOG concentrations of up to 4,200 ppm.

REMEDIATION

The two alternatives described herein are (1) off-site disposal of the soil at a Class I Hazardous Waste Landfill, and (2) treatment of the soil followed by disposal at a Class III (non-hazardous) landfill.

Alternative 1: Class I Disposal

Depending on schedule and costs, HLA may arrange for off-haul and disposal of the stockpiled soils at a Class I (hazardous waste) landfill. If this alternative is selected, Shell will contract with a licensed hazardous waste hauler to remove the material to the landfill.

Alternative 2: Treatment of Soil and Disposal at a Class III Landfill

The second alternative involves treatment of the soil, using biological techniques, to reduce the concentrations of oil to below 100 ppm prior to off-haul to a Class III landfill.

Under Alternative 2, we anticipate that the stockpile from the hydraulic hoist excavation would be hauled directly to Bay Area Tank and Marine Environmental Techniques (BATM) for biological treatment. BATM has a facility at Seawall Lot 344, China Basin, in San Francisco. That facility has been inspected by representatives of the San Francisco Public Health Department (SFPHD) and the Regional Water Quality Control Board (RWQCB). For further information concerning BATM, contact Mr. John Rapp of SFPHD at (415) 554-2737 or Mr. Tom Callaghan of the RWQCB at (415) 464-1382.

Because the soil from the waste oil excavation has hydrocarbon concentrations exceeding 1,000 ppm, BATM will treat the material on site until concentrations have been reduced to below 1,000 ppm, and then will have it hauled to the BATM facility for further treatment.

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Mr. Jorge Gomar
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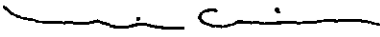
Harding Lawson Associates

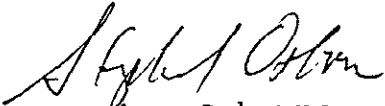
After the oil concentrations from the hydraulic hoist and waste oil excavation soils have been reduced to below 100 ppm, they would be off-hauled for disposal in a Class III landfill.

If there are any questions regarding the contents of this letter, please contact us at your convenience.

Yours very truly

HARDING LAWSON ASSOCIATES


Michael A. Chamberlain
Staff Geologist


Stephen Osborne
Civil Engineer



MAC/SJO/pkp 031827P/L27

cc: John Williams, Shell Oil Company
Michelle Hammer, Walton Engineering
Kevin Hoverman, Walton Engineering
Forrest Cannut, Bay Area Tank & Marine

Table 1: Summary of Chemical Analysis Stockpile Soil Samples

Sample Date	Sample Number	TPH gasoline (ppm)	TPH diesel (ppm)	TPH waste oil (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	Total lead (ppm)
10/31/90	S-1	69	260	4200	0.072	0.038	0.17	0.25	7.5
11/06/90	HS-1	N/D	N/D	N/D	N/D	0.012	N/D	N/D	0.93
11/06/90	HS-2	N/D	8.0	40	N/D	0.086	N/D	0.0053	2.0
11/06/90	HS-3	N/D	5.5	270	N/D	N/D	N/D	N/D	1.7
11/06/90	HS-4	N/D	N/D	N/D	N/D	0.063	N/D	0.0056	2.4

N/D = Not detected

ppm = parts per million

Completed
Results

SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319
DOHS #220

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

LABORATORY NO.: 82748
CLIENT: Bay Area Tank & Marine
CLIENT JOB NO.: SHELL PACIFICA

DATE RECEIVED: 03/27/91
DATE REPORTED: 03/29/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg)	
		Gasoline Range	Diesel Range
1	PACIFICA 1A	ND<10	ND<10
2	PACIFICA 1B	ND<10	ND<10
3	PACIFICA 2A	ND<10	ND<10

Method Detection Limit for Gasoline and Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily standard run at 200mg/L: RPD Diesel = 8
MS/MSD Average Recovery = 107%: Duplicate RPD = 0

Richard Srna, Ph.D.


Laboratory Manager

SUPERIOR ANALYTICAL LABORATORIES, INC.

825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512

DOHS #319
DOHS #220

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

LABORATORY NO.: 82748
CLIENT: Bay Area Tank & Marine
CLIENT JOB NO.: SHELL PACIFICA

DATE RECEIVED: 03/27/91
DATE REPORTED: 03/29/91

ANALYSIS FOR TOTAL LEAD
by 8W-846 Method 7420

LAB #	Sample Identification	Concentration (mg/Kg) Total Lead
1	PACIFICA 1A	ND<10
3	PACIFICA 2A	ND<10

mg/Kg - parts per million (ppm)

Method Detection Limit for Lead in Soil: 10 mg/Kg

QAQC Summary: MS/MSD Average Recovery : 96%
Duplicate RPD : 4

Richard Srna, Ph.D.

Robert Waters (fug)
Laboratory Manager

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE UNIT I • SAN FRANCISCO CA 94124 • PHONE (415) 647-2081

DHS #1332

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

LABORATORY NO.: 53370
CLIENT: Bay Area Tank & Marine
CLIENT JOB NO.: SHELL PACIFIC

DATE RECEIVED: 03/26/91
DATE REPORTED: 03/27/91

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE by Method 5520F (formerly 503E)

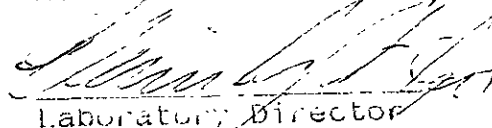
LAB #	Sample Identification	Concentration (mg/kg) Total oil & grease
1	PACIFICA 1A	ND<50
2	PACIFICA 1B	58
3	PACIFICA 2A	58

mg/kg - parts per million (ppm)

Minimum Detection Limit for oil & grease in Soil: 50mg/kg

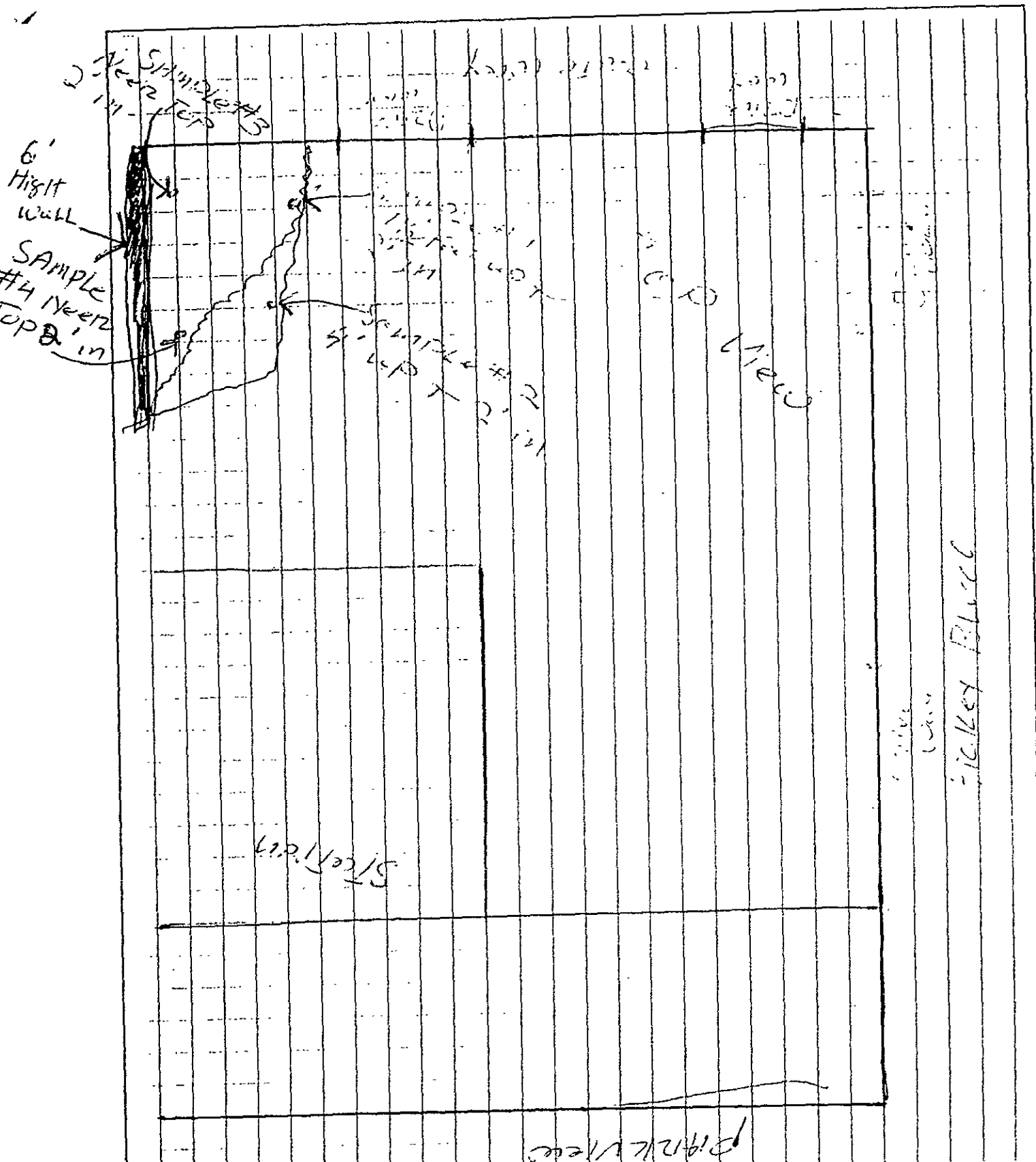
QAQC Summary:
MS/MSD average recovery = 41%
Duplicate RPD = 29%

Richard Srna, Ph.D.



Laboratory Director

OUTSTANDING QUALITY AND SERVICE



BAY AREA TANK & MARINE ENVIRONMENTAL TECHNOLOGIES

4851-104 SUNRIZE DRIVE
MARTINEZ, CALIFORNIA 94553

Full Samples
Sample #112x
12/31/90

DATE:

12-21-90

PROJECT NO.:

2152

