CERTIFIED
ENVIRONMENTAL
CONSULTING INC.

93 AUG 20 PM 1:24

August 16, 1993

REF: 92-173-631

Ms. Eva Chew
Division of Hazardous Materials
Alameda County Department
of Environmental Health
80 Swan Way, Room 350
Oakland, CA 94621

SUBJECT: SAMPLING TO CLOSE TWO UNDERGROUND STORAGE TANKS IN PLACE AT THE LIVERMORE VA HOSPITAL, LIVERMORE, CA

Dear Ms. Chew:

Certified Environmental Consulting, Inc. (CEC) is pleased to present this report for soil sampling adjacent to the two underground storage tanks (UST's) located behind Building 62 at the Livermore VA Hospital.

The tanks are 2,000 gallon and 5,000 gallon capacity, and both tanks have been used exclusively for diesel fuel. The tanks are in an area that has limited access and numerous electrical lines cross over the tanks, carrying up to 12,000 volts. For this reason, CEC has sampled the soil at the ends of the tanks to show that the tanks are not a source of contamination or a threat to groundwater with the intention of closing the tanks in place.

Figure 1 is a Site and Sample Location Map. A combination of hand augering and a utility locator service was used to identify the locations of the tanks and electrical lines in the immediate area. After all the hazards were identified, a portable Minuteman drill rig was used to collect the samples. The first boring was advanced and sampled on July 30, 1993, but due to an equipment failure, no other borings were possible that day. On August 11, 1993, the other 3 borings were advanced and sampled. A poorly graded, silty sand soil type was encountered in all borings. There was no visible staining, petroleum odor, or groundwater encountered in any borings. In general, the borings were placed within two feet of the tank end on centerline, except B2 which was placed off the corner of the tank (on the down slope side) to avoid electrical lines. The tops of the tanks were approximately 3' to 4' below ground surface and it was assumed that the tanks were not more than 8' in diameter. The borings were advanced to a depth of 15' below grade (3 - 4' below the bottom of the tanks) and sampled at that depth using a modified California split-spoon sampler. The samples were delivered under chain of

536 Stone Road, Suite J
Benicia, California 94510-1170

Ofc (707) 745-0171
Fax (707) 745-0163
(800) 228-0171

custody to a State certified laboratory and tested for TPH(D). Due to laboratory error, Sample B1 at 15' was analyzed for TPH(D), TPH(G) and BTEX. Copies of the chain of custody records, laboratory reports, and laboratory QC reports are in the Appendix. To summarize, the results of all the laboratory testing were non-detect for the compounds analyzed. Table 1 below lists the results of all laboratory testing.

TABLE 1

ANALYTICAL DATA

SAMPLE	TPH(D)	TPH(G)	BENZENE	TOLUENE	ETHYL BENZENE	XYLENE
B1 @ 15'	ND	ND	ND	ND	ND	ND
B2 @ 15'	ND	NA	NA	NA	NA	NA
B3 @ 15'	ND	NA	NA	NA	NA	NA
B4 @ 15'	ND	NA	NA	NA	NA	NA

ND = NON DETECT
NA = NOT ANALYZED

Based on this data, CEC believes that closing these two tanks in place does not represent a threat to groundwater.

The proposed procedure for closing the tanks in place will be to remove all contents of the tanks and expose the top of the tanks. All piping will be disconnected and removed or rinsed and capped in place. The tanks will then be cleaned, triple rinsed, and the rinsate will be pumped out of the tanks. The rinsate will be disposed of under manifest as a non RCRA hazardous waste in an appropriate manner. After the tanks are clean, they will be filled with concrete slurry to capacity and the excavation will be backfilled to match the surrounding area with the excavated soil.

It is CEC's understanding that Alameda County Department of Environmental Health has jurisdiction over the environmental issues regarding the closure in place. The safety issues are the responsibility of the Livermore VA Medical Center Fire Department because the site is on Federal property. Obtaining clearance from the Livermore VA Medical Center Fire Department to close the tanks in place will be obtained internally by Livermore VA Medical Center Engineering Services.

If you have any questions or comments regarding this request for in place closure, please call CEC at (707) 745-0171.

Sincerely,

James H Robbins

James H. Robbins
Environmental Specialist

Stanley L. Klemetson, Ph.D, P.E.
Executive Vice President

Attachments

cc: Ms. Marcie Bell
Contracts Administrator
VA Medical Center
4951 Arroyo Road
Livermore, CA 94550

Mr. Jim Pitzer
Operations Foreman
Engineering Service
VA Medical Center
4951 Arroyo Road
Livermore, CA 94550

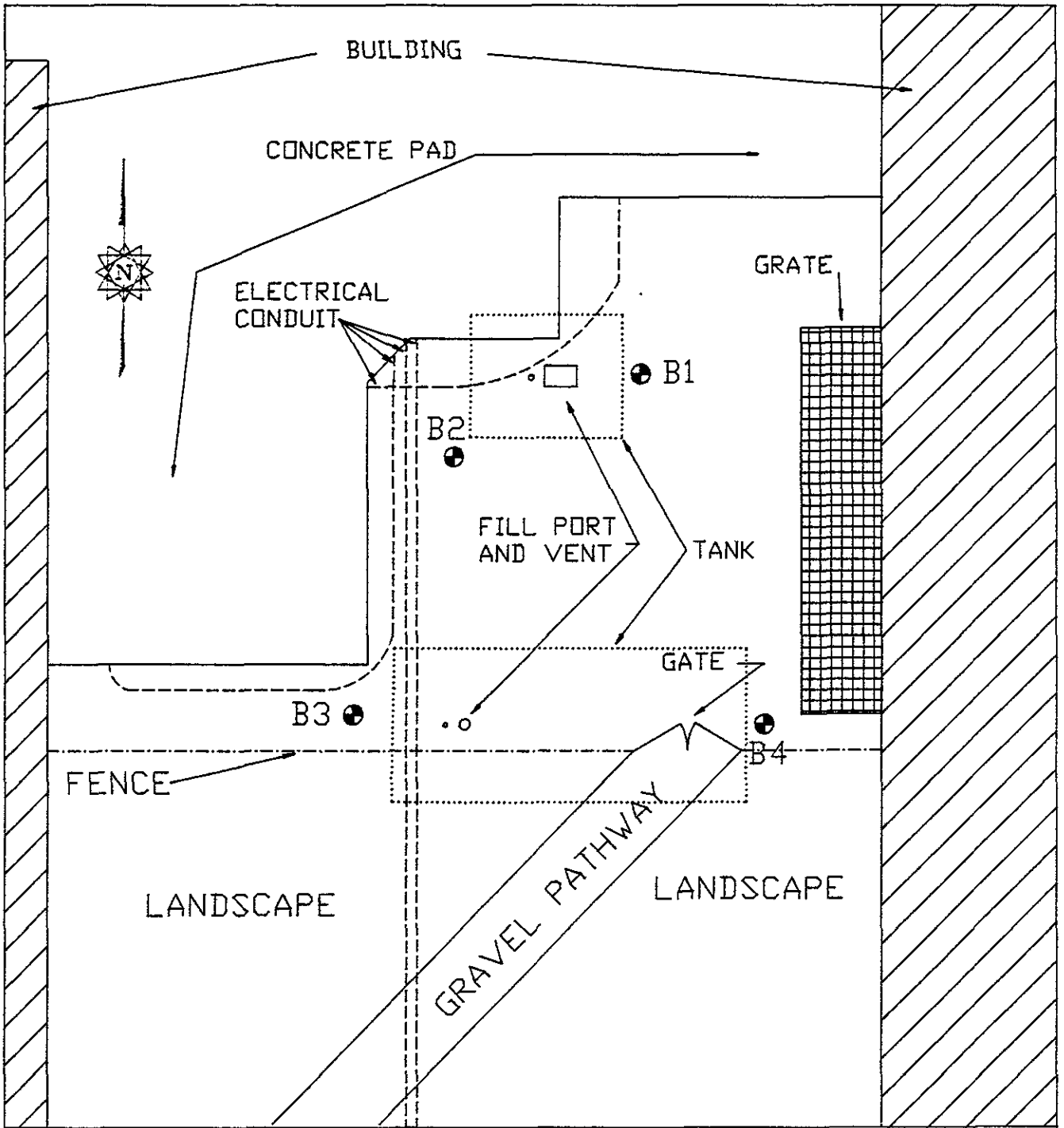

FIGURE 1
SITE AND SAMPLE LOCATION MAP
BLDG 62 TANKS AT VA LIVERMORE

CERTIFIED ENVIRONMENTAL CONSULTING
356 STONE ROAD, SUITE J, BENICIA, CA 94510
(707) 745-0171 / (800) 228-0171 / (707) 745-0163 FAX

LEGEND:

● = BORING LOCATION

0 2.5' 5' 10'

APPENDIX

4002500

CERTIFIED ENVIRONMENTAL CONSULTANTS INC.
180 West Industrial Way, Benicia, CA, 94510-1016
Ofc. (707) 745-0171 (800) 447-0171 Fax. (707) 745-0163

Chain of Custody Record

Date 8/11/93 Sheet 1 of 1

Project Number: 173-631
Project Name: Livermore VA
Address:

Sampler's Name: Jim Robbins
Sampler's Signature: James H Robbins

Parameters

Sample Number	Location	Date	Time	TPH as Gasoline 8015	TPH as Diesel 8015	TPH-G and B.T.E.X 8015/8020	B.T.X.& E 8020	Oil and Grease 5520	Volitile Organics (8010)	CAM Metals (17)	Pr. Pollutant Metals (13)	Base/Neu/Acids (Organic)	Pesticides 8140/8141	Matrix (Soil/Water)
B2@15'		8/11/93			X									S
B3@15'		8/11/93			X									S
B4@15'		8/11/93			X									S

ICE/T ✓ PRESERVATIVE
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓

VOAS | O&G | METALS | OTHER

Lab Name
Address
Phone Number

Turnaround Time
☐ Rush ☐ 24 Hour ☐ 48 Hour ☒ 5-Day
Report to:

31699
31700
31701

Relinquished By	Date	Time	Received By	Date	Time
1. James H Robbins	8/11/93	1600	1. [illegible]	8-11-93	16:00
2.			2.		
3.			3.		
Dispatched By	Date	Time	Received in Lab By	Date	Time

Total Number of Containers This Sheet: 3

Method of Shipment

Special Shipment / Handling or Storage Requirements:

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Certified Environmental Consulting 536 Stone Road, Ste. J Benicia, CA 94510-1016	Client Project ID: 173-631; Livermore, CA	Date Sampled: 08/11/93
		Date Received: 08/11/93
	Client Contact: Jim Robbins	Date Extracted: 08/13/93
	Client P.O:	Date Analyzed: 08/13/93

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
31699	B2@15'	S	ND	97
31700	B3@15'	S	ND	95
31701	B4@15'	S	ND	94
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	
		S	10 mg/kg	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light(c_L) or heavy(c_H) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 08/12-08/13/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.944	2.082	2.03	96	103	6.8
Benzene	0.000	0.200	0.196	0.2	100	98	2.0
Toluene	0.000	0.206	0.204	0.2	103	102	1.0
Ethyl Benzene	0.000	0.200	0.198	0.2	100	99	1.0
Xylenes'	0.000	0.608	0.608	0.6	101	101	0.0
TPH (diesel)	0	316	323	300	105	108	2.2
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL

110 2nd AVENUE, # D7
PACHECO, CA 94553
(510) 798-1620 FAX (510) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

REPORT TO: Jim Robbins BILL TO:

COMPANY: CEC

TELE: FAX #:

PROJECT NUMBER: 173-63) PROJECT NAME: Livermore VA

PROJECT LOCATION: Livermore VA Med SAMPLER SIGNATURE: James H Robbins

SAMPLE ID	LOCATION	SAMPLING DATE	SAMPLING TIME	# CONTAINERS	TYPE CONTAINERS	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	MATRIX: OTHER	METHOD PRESERVED: HCL	METHOD PRESERVED: HNO_3	METHOD PRESERVED: OTHER
Tank 1 East @ 15'		7/30/93		1			X						

ANALYSIS REQUEST

BTEX & TPH as Gasoline (602/8020 & 8015)	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/5520 B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080 - PCBs Only	EPA 624/8240/8260	EPA 625/8270	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD (7240/7421/239.2/6010)	ORGANIC LEAD	
	X													

OTHER

COMMENTS

31552

ICE/T° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE
APPROPRIATE
CONTAINERS ✓

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
James H Robbins	7/30/93	1330	Chris Dasaro
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE	TIME	RECEIVED BY LABORATORY:

REMARKS:

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Certified Environmental Consulting 536 Stone Road, Ste. J Benicia, CA 94510-1016	Client Project ID: 173-631; Livermore	Date Sampled: 07/30/93
		Date Received: 07/30/93
	Client Contact: Jim Robbins	Date Extracted: 08/02/93
	Client P.O:	Date Analyzed: 08/02/93

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
31552	Tank 1 East@15'	S	ND	ND	ND	ND	ND	97
Detection Limit unless other-wise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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		Date Received: 07/30/93
	Client Contact: Jim Robbins	Date Extracted: 07/30/93
	Client P.O:	Date Analyzed: 07/30/93

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
31552	Tank1-East@15'	S	ND	98
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	
		S	10 mg/kg	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light(C_L) or heavy(C_H) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

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Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/30/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	1.992	1.835	2.03	98	90	8.2
Benzene	0.000	0.200	0.194	0.2	100	97	3.0
Toluene	0.000	0.210	0.202	0.2	105	101	3.9
Ethyl Benzene	0.000	0.208	0.200	0.2	104	100	3.9
Xylenes	0.000	0.624	0.606	0.6	104	101	2.9
TPH (diesel)	0	289	293	300	96	98	1.3
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

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110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 08/01-02/93 Matrix: Soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.000	2.244	1.987	2.03	111	98	12.1
Benzene	0.000	0.156	0.154	0.2	78	77	1.3
Toluene	0.000	0.164	0.164	0.2	82	82	0.0
Ethyl Benzene	0.000	0.158	0.160	0.2	79	80	1.3
Xylenes	0.000	0.494	0.496	0.6	82	83	0.4
TPH (diesel)	0	346	347	300	115	116	0.3
TRPH (oil & grease)	0.0	21.4	21.6	20.8	103	104	0.9

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

ectronics & Biomed Shops

Fire Department

PALO ALTO VAMC/LIVERMORE DIVISION
ENGINEERING SERVICE

Carpenter Shop

Grounds Shop

Boiler Plant & Plumbers

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TO: NAME: EVA CHU MAIL#:

Alameda County Health Agency

Div. of Environmental Protection FAX#: 510-337-9335

Dept. of Environmental Health

FROM: NAME: Jim Pitrea MAIL#: 138

PHONE: FTS: 700 - 467-6401

COMMERICAL: 510-447-2560, EXT. 6401

FAX: 510 - 455-7428

Electric Shop

Grounds Sh

SUBJECT: Sample results trench samples

COMMENT(S):

PAGES SENT: 4 + COVER

DATE SENT: 3/23/95 TIME SENT: 11:40 AM P.S.T.

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Growth Environmental Services 536 Stone Road, Ste. J Benicia, CA 94510-1016	Client Project ID: # 173-631; VA Med. Center, Livermore	Date Sampled: 03/17/95
		Date Received: 03/17/95
	Client Contact: Michael Davis	Date Extracted: 03/17/95
	Client P.O: # 1479	Date Analyzed: 03/17/95

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
50964	Skp 1	S	19,b	98
50965	T-1	S	5700,a	99
50966	T-2	S	50,b/e	97
50967	T-3	S	3.5,d,g	98
50968	T-4	S	ND	97
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	
		S	1.0 mg/kg	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; surrogate and sample peaks co-elute or surrogate peak is on elevated baseline

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) modified diesel?; light(c_L) or heavy(c_H) diesel compounds are significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel(degraded diesel?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Growth Environmental Services 536 Stone Road, Ste. J Benicia, CA 94510-1016	Client Project ID: # 173-631; VA Med. Center, Livermore	Date Sampled: 03/17/95
		Date Received: 03/17/95
	Client Contact: Michael Davis	Date Extracted: 03/17/95
	Client P.O: # 1479	Date Analyzed: 03/20/95

LUFT Metals*

			EPA analytical methods	239.2,7420+	213.1,7130	218.1,7190	249.1,7520	289.1,7950
Lab ID	Client ID	Matrix	Extraction@	Lead+	Cadmium+	Chromium+	Nickel+	Zinc+
50964	Stkp 1	S	TTLC	7.8	ND	17	22	31
50965	T-1	S	TTLC	6.1	ND	13	11	19
50966	T-2	S	TTLC	6.5	ND	12	20	28
50967	T-3	S	TTLC	8.3	ND	17	16	39
50968	T-4	S	TTLC	4.9	ND	16	14	23
Detection Limit unless otherwise stated; ND means Not Detected		W	TTLC	0.005mg/L	0.05	0.25	0.10	0.05
		S	TTLC	4.0 mg/kg	1.0	5.0	2.0	1.0
		...	STLC,TCLP	0.20 mg/L	0.05	0.25	0.10	0.05

* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

+ Lead is analysed using EPA method 7420 (AA Flame)for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

@ EPA extraction methods 131 (TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

DHS Certification No. 1644

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McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622

Growth Environmental Services	Client Project ID: # 173-631; VA Med. Center, Livermore	Date Sampled: 03/17/95
536 Stone Road, Ste. J		Date Received: 03/17/95
Benicia, CA 94510-1016	Client Contact: Michael Davis	Date Extracted: 03/17-03/20/95
	Client P.O: # 1479	Date Analyzed: 03/17-03/20/95

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX^

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
50964	Stkp 1	S	---	ND	ND	ND	ND	103
50965	T-1	S	---	0.017	0.022	0.21	0.50	99
50966	T-2	S	---	ND	ND	ND	0.009	101
50967	T-3	S	---	ND	ND	ND	ND	108
50968	T-4	S	---	ND	ND	ND	ND	103
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

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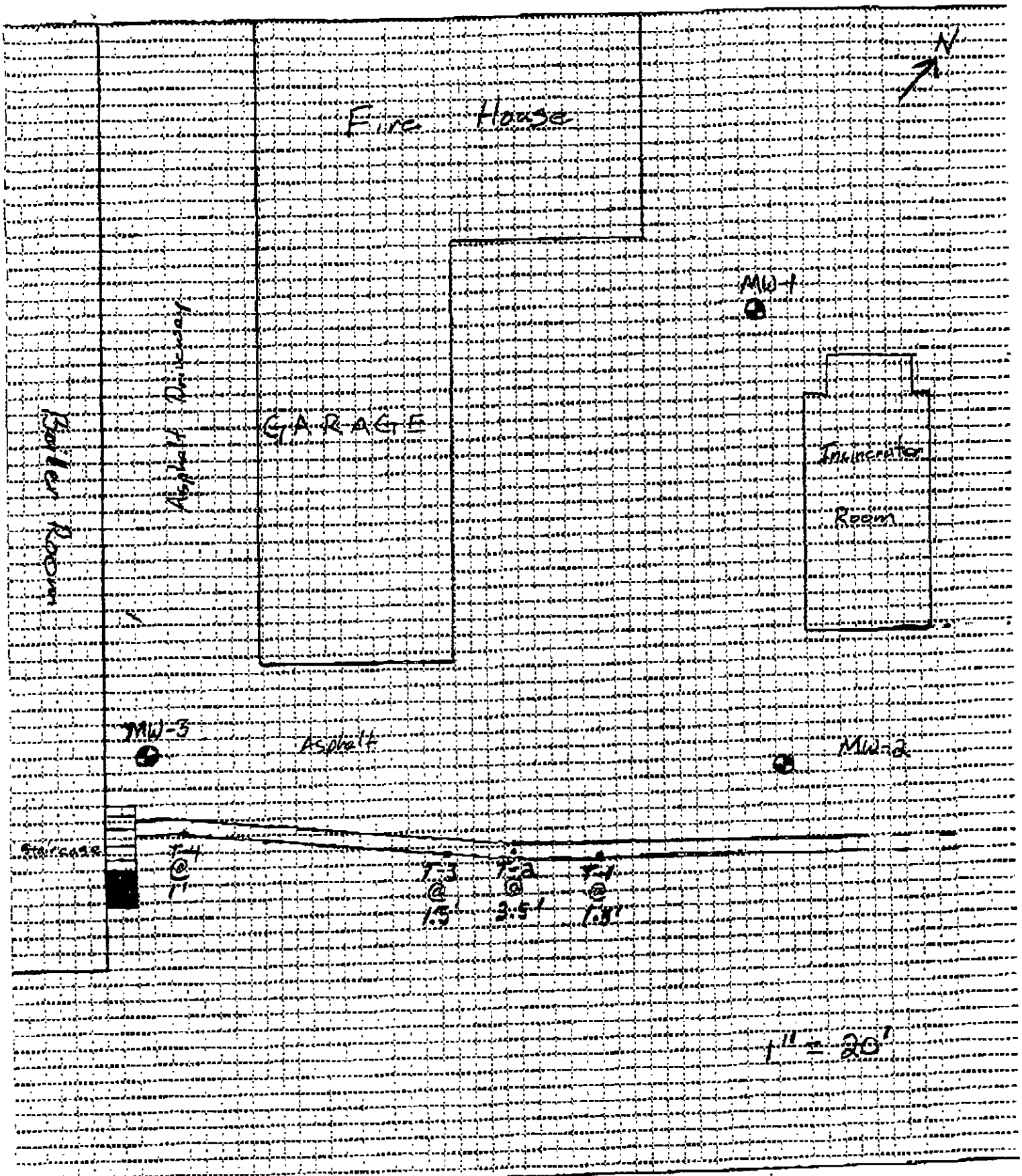

VA Med Center. 4951 Arroyo Rd. Livermore, CA 94550

173-631
*SB2004

ACAD Operator Code 920

CERTIFIED ENVIRONMENTAL CONSULTING
536 STONE ROAD SUITE . BENICIA CA. 94510
(707) 745-31[illegible] (800) 229-31[illegible] / (707) 745-1163 FAX