M60050.001374

M60050.001374
MCAS EL TORO
SSIC # 5090.3

Environmental Protection Agency
Region IX
Attn: Mr. John Hamill
H-9-2
75 Hawthorne Street
San Francisco, CA 94105

Dear Mr. Hamill:

We have sampled the soil removed from Stratum 3 at Site 8--DRMO Storage Yard No. 1. The sample results, enclosure (1), showed the soils to be non-hazardous.

As agreed during the 23-24 March 1994 Remedial Project Managers meeting, we will use the soil as backfill at the excavated area of Site 18, the ACER site.

Please contact Chrisa Mitchell at (714) 726-3886 if you have any questions.

Sincerely,

WAYNE D. LEE
AC/S Environment & Safety
By direction of
the Commanding General

Encl:
(1) Sample Results--Yard No. 1 Soil

Copy to:
Department of Toxic Substances Control
Regional Water Quality Control Board
COMCABWEST (AQ2/1AJ/1JJ)
SOUTHWESTNAVFACENGCOM

PROJECT REPORT

SOIL STOCKPILE CHARACTERIZATION

AT SITE *********

EL TORO MARINE CORPS AIR STATION

EL TORO, CALIFORNIA

22 March 1994

Prepared for:

NAVAL FACILITIES ENGINEERING COMMAND
Southwest Division, Code 18
1220 Pacific Highway
San Diego, CA 92132-5181

Prepared by:

NAVY PUBLIC WORKS CENTER
Code 930
2730 McKean Street, Suite 1
San Diego, CA 93136-5294

INTRODUCTION

Approximately 200 cubic yards of soil were inadvertently removed by a contractor from an Installation Restoration Site (IR Site 8, Stratum 3, top 2 feet of soil) at El Toro Marine Corps Air Station (MCAS) and placed at a separate site at MCAS. MCAS staff learned of the soil transfer on 10 Dec 93 and moved the soil onto a more secure area. MCAS took measures to line and cover the soil with visqueen plastic sheeting. At the request of Naval Facilities Engineering Command, PWC performed the following:

a. Tested the initial soil placement site

b. Characterized the existing stockpile

PWC performed site testing and stockpile characterization which included retrieving three samples from the initial soil placement site and ten samples from the stockpile using a random sampling grid. The samples were tested using the following analytical methods:

i. EPA 6010 (Antimony, Cadmium, Chromium, Lead, Mercury, Silver, and Zinc)

ii. EPA 8080 (PCBs)

iii. TRPH

iv. TPH-diesel

v. Waste Extraction Test (STLC)

PWC performed sample recovery on Saturday, 12 Feb 94. The results of the analyses are listed on the following tables.

The site map, sampling grid diagram, and laboratory analytical reports are attached at the end of this report.

BARIUM			
SAMPLE NO.	LAB LOG NO.	TTLC (mg/kg)	STLC (mg/l)
Q1-1	41061	85.6	not tested
Q1-4	41062/41812	189.5	4.96
Q2-2	41060	93.3	not tested
Q2-4	41059/41813	116.2	3.98
Q2-6	41058/41814	139.6	3.56
Q3-1	41055	51.0	not tested
Q3-4	41054/41815	112.2	4.39
Q3-5	41053/41816	163.1	4.71
Q4-7	41057/41817	125.2	3.92
Q4-8	41056/41818	113.4	4.90

CADMIUM			
SAMPLE NO.	LAB LOG NO.	TTLC (mg/kg)	STLC (mg/l)
Q1-1	41061/41802	2.0	0.04
Q1-4	41062/41803	2.1	0.03
Q2-2	41060/41804	1.8	0.03
Q2-4	41059/41805	1.9	ND
Q2-6	41058/41806	2.6	0.03
Q3-1	41055/41807	1.3	ND
Q3-4	41054/41808	2.3	ND
Q3-5	41053/41809	2.8	ND
Q4-7	41057/41810	2.7	ND
Q4-8	41056/41811	3.5	ND

CHROMIUM (VI)

SAMPLE NO.	LAB LOG NO.	TTLC (mg/kg of total Cr)	STLC (mg/l of Cr^{+6})
Q1-1	41061/41802	6.3	0.08
Q1-4	41062/41803	11.1	0.07
Q2-2	41060/41804	7.7	0.02
Q2-4	41059/41805	12.3	0.05
Q2-6	41058/41806	11.9	0.02
Q3-1	41055/41807	6.9	0.02
Q3-4	41054/41808	14.9	0.01
Q3-5	41053/41809	22.7	0.13
Q4-7	41057/41810	11.5	0.007
Q4-8	41056/41811	17.9	0.009

LEAD:

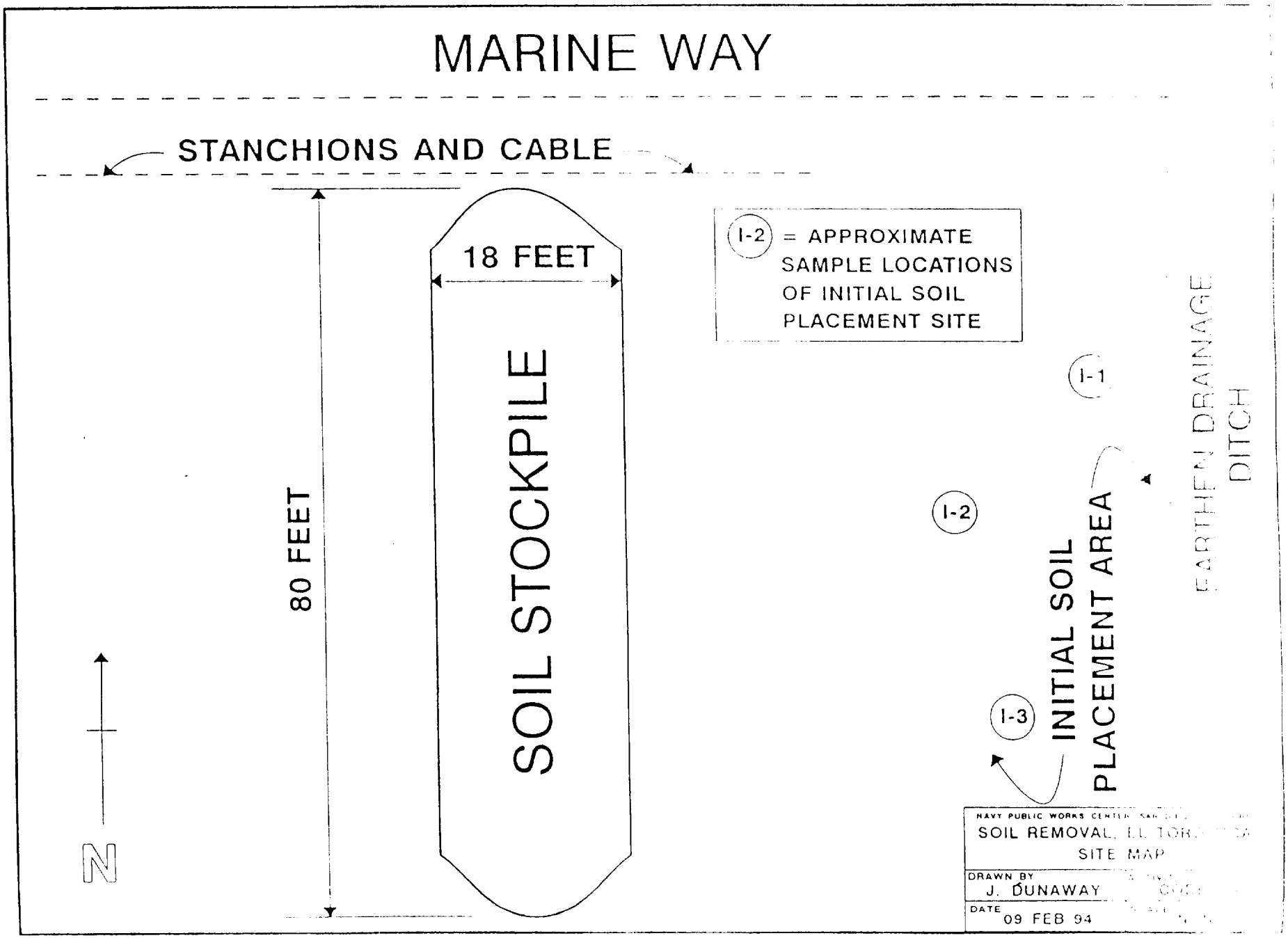
SAMPLE NO.	LAB LOG NO.	TTLC (mg/kg)	STLC (mg/l)
Q1-1	41061/41802	18.3	0.88
Q1-4	41062/41803	39.1	1.46
Q2-2	41060/41804	37.2	1.04
Q2-4	41059/41805	55.9	4.04
Q2-6	41058/41806	42.2	1.60
Q3-1	41055/41807	24.0	2.62
Q3-4	41054/41808	61.3	2.04
Q3-5	41053/41809	74.7	1.93
Q4-7	41057/41810	38.1	1.99
Q4-8	41056/41811	38.9	1.18

ZINC			
SAMPLE NO	LAB LOG NO.	TTLC (mg/kg)	STLC (mg/l)
Q1-1	41061/41802	not tested	3.03
Q1-4	41062/41803	not tested	2.48
Q2-2	41060/41804	not tested	1.50
Q2-4	41059/41805	not tested	4.04
Q2-6	41058/41806	not tested	2.03
Q3-1	41055/41807	not tested	3.0
Q3-4	41054/41808	not tested	2.28
Q3-5	41053/41809	not tested	2.26
Q4-7	41057/41810	not tested	2.0
Q4-8	41056/41811	not tested	2.11

PCBs:			
SAMPLE NO.	LAB LOG NO.	TTLC (mg/kg)	STLC (mg/l)
Q1-1	41061	4.6	not tested
Q1-4	41062/41819	17.1	ND
Q2-2	41060/41820	6.0	ND
Q2-4	41059/41821	12.0	ND
Q2-6	41058/41822	20.0	ND
Q3-1	41055/41823	10.0	ND
Q3-4	41054/41824	5.9	ND
Q3-5	41053	3.7	not tested
Q4-7	41057	1.7	not tested
Q4-8	41056	0.5	not tested

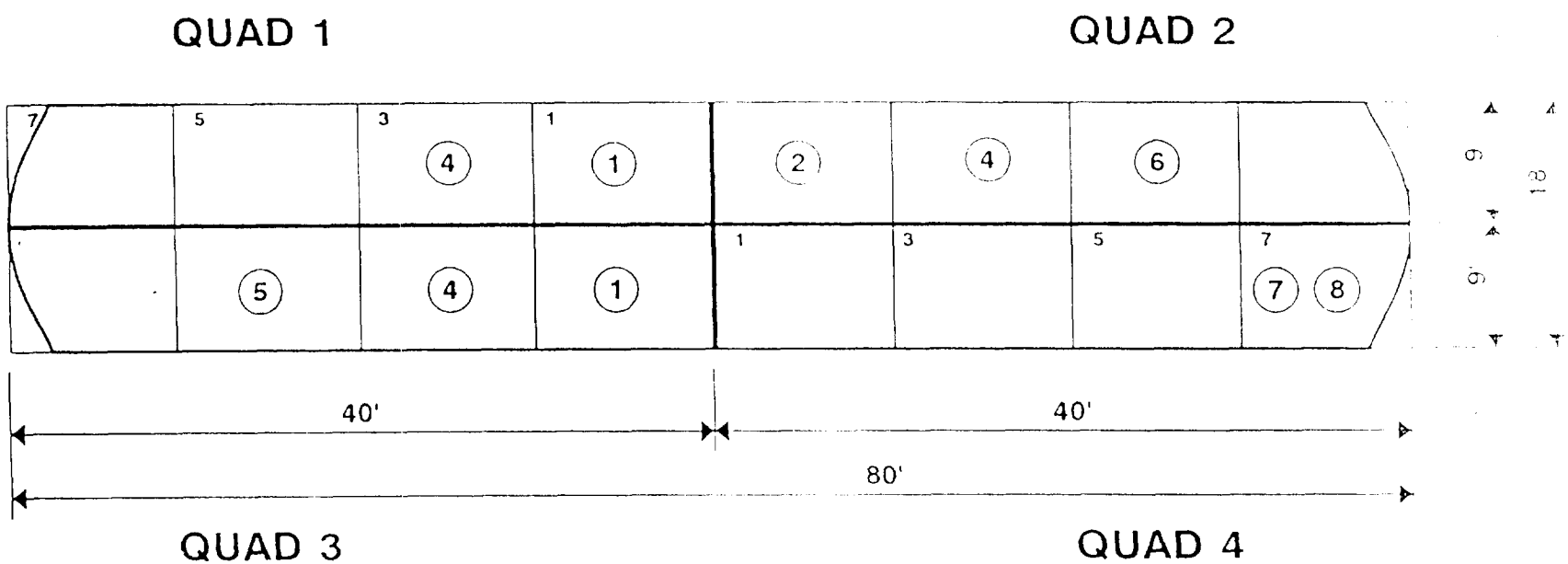
TEPH (418.1):		
SAMPLE NO.	LAB LOG NO	RESULTS (mg/kg)
Q1-1	41061	ND
Q1-4	41062	66.7
Q2-2	41060	125.5
Q2-4	41059	178.1
Q2-6	41058	62.9
Q3-1	41055	133.5
Q3-4	41054	327.5
Q3-5	41053	276.5
Q4-7	41057	470.8
Q4-8	41056	230.6

TPH (418.1 for diesel):		
SAMPLE NO.	LAB LOG NO.	RESULTS (mg/kg)
Q1-1	41061	ND
Q1-4	41062	ND
Q2-2	41060	ND
Q2-4	41059	ND
Q2-6	41058	ND
Q3-1	41055	ND
Q3-4	41054	ND
Q3-5	41053	ND
Q4-7	41057	ND
Q4-8	41056	ND


MARINE WAY
STANCHIONS AND CABLE
18 FEET
80 FEET
SOIL STOCKPILE
I-2 = APPROXIMATE SAMPLE LOCATIONS OF INITIAL SOIL PLACEMENT SITE
I-1
I-2
I-3
INITIAL SOIL PLACEMENT AREA
EARTHEN DRAINAGE DITCH
N
NAVY PUBLIC WORKS CENTER
SOIL REMOVAL,
SITE MAP
DRAWN BY
J. DUNAWAY
DATE
09 FEB 94

ESTIMATED VOLUME = 229 CUBIC YARDS
AVERAGE HEIGHT = 5.5 FEET
STOCKPILE LENGTH = 80 FEET
STOCKPILE WIDTH = 18 FEET

NOTE: POTENTIAL SAMPLE LOCATIONS WERE NUMBERED STARTING FROM THE CENTER CORNER PROCEEDING OUTWARD. ODD NUMERED LOCATIONS WERE IDENTIFIED ON THE LOWER HORIZON (2 FEET AGS); EVEN NUMBERED LOCATIONS WERE IDENTIFIED ON THE UPPER HORIZON (4 FEET AGS). EACH QUAD HAS 8 POTENTIAL SAMPLING LOCATIONS ON TWO HORIZONS (4 PER HORIZON). A MINIMUM OF TWO RANDOM SAMPLES PER QUAD WERE COLLECTED



SAMPLE GRID = 9.0 FEET x 10.0 FEET

LEGEND
3 = POTENTIAL SAMPLE GRID NUMBER
(3) = SAMPLE NUMBER
AGS = ABOVE GROUND SURFACE

NAVY PUBLIC WORKS CENTER SAN
SOIL REMOVAL, EL TOR
SAMPLING GRID

DRAWN BY: J. DUNAWAY	ACTIVITY CODE
DATE: 09 FEB 94	SCALE NO

Navy Public Works Center
Environmental Engineering Laboratory Code 910
Naval Air Station North Island Bldg 288
San Diego, CA 92135
(619) 545-8431

ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:02/14/94
DATE ANALYSIS COMPLETED:02/25/94
ANALYST: ACM,ER,JC,JV

LAB NUMBER:41061
SAMPLE ID: Q1-1 /0940
DATE OF REPORT:02/28/94
UNITS: MILLIGRAMS/KILOGRAM (PPM)
SAMPLE PREP: EPA 3051

PARAMETER TTLC METALS	METHOD EPA	DETECTION LIMIT	RESULT
1. ARSENIC	6010	0.5	1. ND
2. BARIUM	6010	2.50	2. 85.6
3. CADMIUM	6010	1.00	3. 2.0
4. CHROMIUM	6010	2.00	4. 6.30
5. LEAD	6010	3.00	5. 18.30
6. MERCURY	7471	0.2	6. ND
7. SELENIUM	6010	7.50	7. ND
8. SILVER	6010	1.0	8. ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS OR LESS THAN DETECTION LIMIT.
TTLC = TOTAL THRESHOLD LIMIT CONCENTRATION.

JOE ARLAUSKAS
LABORATORY DIRECTOR

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Environmental Engineering Laboratory Code 410
Naval Air Station North Island Bldg 788
San Diego, CA 92135
(619) 545-8431

ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:02/14/94
DATE ANALYSIS COMPLETED:02/25/94
ANALYST: ACM,ER,JC

LAB NUMBER:41062
SAMPLE ID: Q1-4/0945
DATE OF REPORT:02/28/94
UNITS: MILLIGRAMS/KILOGRAM (PPM)
SAMPLE PREP: EPA 3050

PARAMETER TTLC METALS	METHOD EPA	DETECTION LIMIT	RESULT
1. ARSENIC	6010	0.5	1. ND
2. BARIUM	6010	1.25	2. 189.5
3. CADMIUM	6010	0.50	3. 2.1
4. CHROMIUM	6010	1.00	4. 11.1
5. LEAD	6010	1.50	5. 39.1
6. MERCURY	7471	0.2	6. ND
7. SELENIUM	6010	3.75	7. ND
8. SILVER	6010	0.50	8. ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS OR LESS THAN DETECTION LIMIT.
TTLC = TOTAL THRESHOLD LIMIT CONCENTRATION.

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San Diego, CA 92135
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ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:02/14/94
DATE ANALYSIS COMPLETED:02/25/94
ANALYST: ACM,ER,JC,JV

LAB NUMBER:41059
SAMPLE ID: Q2-4 /0925
DATE OF REPORT:02/28/94
UNITS: MILLIGRAMS/KILOGRAM (PPM)
SAMPLE PREP: EPA 3051

PARAMETER TTLC METALS	METHOD EPA	DETECTION LIMIT	RESULT
1. ARSENIC	7060	0.5	1. ND
2. BARIUM	6010	2.50	2. 116.15
3. CADMIUM	6010	1.00	3. 1.90
4. CHROMIUM	6010	2.00	4. 12.25
5. LEAD	6010	3.00	5. 55.90
6. MERCURY	7471	0.2	6. ND
7. SELENIUM	6010	7.50	7. ND
8. SILVER	6010	1.0	8. ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS OR LESS THAN DETECTION LIMIT.
TTLC = TOTAL THRESHOLD LIMIT CONCENTRATION.

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San Diego, CA 92135
(619) 545-8431

ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/1994
DATE SAMPLE RECEIVED: 02/12/1994
DATE ANALYSIS COMPLETED:02/18/1994
ANALYST: ER, JC, ACM.

LAB NUMBER: 41055
SAMPLE ID: Q3-1
DATE OF REPORT:02/25/1994
UNITS: MILLIGRAMS/KILOGRAM(PPM)
SAMPLE PREP: EPA 3051

PARAMETER TTLC METALS	METHOD EPA	DETECTION LIMIT	RESULT
1. ARSENIC	7060	0.5	1. ND
2. BARIUM	6010	2.5	2. 51.0
3. CADMIUM	6010	1.0	3. 1.3
4. CHROMIUM	6010	2.0	4. 6.9
. LEAD	6010	3.0	5. 24.0
6. MERCURY	7471	0.2	6. ND
7. SELENIUM	6010	7.5	7. ND
8. SILVER	6010	1.0	8. ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS OR LESS THAN DETECTION LIMIT.
TTLC = TOTAL THRESHOLD UNIT CONCENTRATION.

Joe Arlauskas

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ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/1994
DATE SAMPLE RECEIVED: 02/12/1994
DATE ANALYSIS COMPLETED:02/18/1994
ANALYST: ER, JC, ACM.

LAB NUMBER: 41053
SAMPLE ID: Q3-5
DATE OF REPORT:02/25/1994
UNITS: MILLIGRAMS/KILOGRAM(PPM)
SAMPLE PREP: EPA 3051

PARAMETER TTLC METALS	METHOD EPA	DETECTION LIMIT	RESULT
1. ARSENIC	7060	0.5	1. ND
2. BARIUM	6010	2.5	2. 163.1
3. CADMIUM	6010	1.0	3. 2.8
4. CHROMIUM	6010	2.0	4. 22.7
5. LEAD	6010	3.0	5. 74.7
6. MERCURY	7471	0.2	6. ND
7. SELENIUM	6010	7.5	7. ND
8. SILVER	6010	1.0	8. ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS OR LESS THAN DETECTION LIMIT.
TTLC = TOTAL THRESHOLD UNIT CONCENTRATION.

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ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/1994
DATE SAMPLE RECEIVED: 02/12/1994
DATE ANALYSIS COMPLETED:02/18/1994
ANALYST: ER, JV, ACM.

LAB NUMBER: 41056
SAMPLE ID: Q4-8
DATE OF REPORT:02/25/1994
UNITS: MILLIGRAMS/KILOGRAM(PPM)
SAMPLE PREP: EPA 3051

PARAMETER TTLC METALS	METHOD EPA	DETECTION LIMIT	RESULT
1. ARSENIC	7060	0.5	1. ND
2. BARIUM	6010	2.5	2. 113.4
3. CADMIUM	6010	1.0	3. 3.5
4. CHROMIUM	6010	2.0	4. 17.9
5. LEAD	6010	3.0	5. 38.9
6. MERCURY	7471	0.2	6. ND
7. SELENIUM	6010	7.5	7. ND
8. SILVER	6010	1.0	8. ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS OR LESS THAN DETECTION LIMIT.
TTLC = TOTAL THRESHOLD UNIT CONCENTRATION.

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San Diego, CA 92135
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ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:02/14/94
DATE ANALYSES COMPLETED:02/20/94
DATE OF REPORT:02/22/94
ANALYST: RS,VZ,JJC
METHOD: EPA 8080
RESULTS EXPRESSED AS: PCB IN MILLIGRAMS PER KILOGRAM (PPM)

LAB LOG NUMBER	SAMPLE ID	RESULT
41053	Q3-5	3.7 *
41054	Q3-4	5.9 *
41055	Q3-1	10.0 **
41056	Q4-8	0.5
41057	Q4-7	1.7 *
41058	Q2-6	20.0 ***
41059	Q2-4	12.0 ***

REMARKS: DETECTION LIMIT = 0.1
* = 0.5
** = 1.0
*** = 2.0

JOE ARLAUSKAS
LABORATORY DIRECTOR

	Analytical Method 418.1 (TRPH)	[4] 230.6	[5] 470.8	[6] 62.9
	Units (e.g. mg/kg) mg/kg	[7] 178.1	[8] 125.5	[9] 0
2	Determine number of sample values n			n = 10
3	Calculate sample mean With n = number of sample measurements $\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$			$\bar{x}$ = 187.2
4	Calculate sample variance $s^2 = \frac{\sum_{i=1}^{n} x_i^2 - \frac{(\sum_{i=1}^{n} x_i)^2}{n}}{n-1}$			s^2 = 20195
5	Calculate sample standard deviation $s = \sqrt{s^2}$			s = 142.1
6	Calculate degrees of freedom $df = n-1$			df = 9
7	Calculate standard error of the mean $s_{\bar{x}} = \frac{s}{\sqrt{n}}$			$s_{\bar{x}}$ = 44.9
8	Obtain student's "t" value corresponding to the degree of freedom value determined in #6 above. (See attached Table reproduced on the next page.)			t_{20} = 1.393
9	Calculate the confidence interval $CI = \bar{x} \pm t_{20}\, s_{\bar{x}}$			CI = 124.6 TO 249.8
10	Obtain regulatory threshold for the contaminant of concern RT			RT = 2000
11	Calculate $\Delta = RT - \bar{x}$			Δ = 1812.8
12	Estimate minimum number of samples $n_{min} = \frac{t_{20}^2\, s^2}{\Delta^2}$			n_{min} = 0.012

[1] *NOTE:* In accordance with the California Code of Regulations, Title 22, Section 66694, EHS follows the sampling guidelines set forth in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Third Edition", U.S. Environmental Protection Agency, 1986.

[illegible]
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Naval Air Station North Island Bldg [illegible]
San Diego, CA 92135
(619) 545-8431

ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:02/12/94
DATE ANALYSIS COMPLETED:02/18/94

DATE OF REPORT:02/23/94
UNITS: MILLIGRAMS/KILOGRAM (PPM)
EPA METHOD: 418.1
ANALYST: ACM

PARAMETER	LAB LOG #	SAMPLE ID	DETECTION LIMIT	RESULT
DIESEL	41053	Q3 - 5	2.0	ND
DIESEL	41054	Q3 - 4	2.0	ND
DIESEL	41055	Q3 - 1	2.0	ND
DIESEL	41056	Q4 - 8	2.0	ND
DIESEL	41057	Q4 - 7	2.0	ND
DIESEL	41058	Q2 - 6	2.0	ND
DIESEL	41059	Q2 - 4	2.0	ND
DIESEL	41060	Q2 - 2	2.0	ND
DIESEL	41061	Q1 - 1	2.0	ND
DIESEL	41062	Q1 - 4	2.0	ND
DIESEL	41063	I - 1	2.0	ND
DIESEL	41064	I - 2	2.0	ND
DIESEL	41065	I - 3	2.0	ND

REMARKS: ND = NONE DETECTED

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ACTIVITY: PWC CODE 900
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:02/14/94
DATE ANALYSIS COMPLETED:02/25/94
ANALYST: ACM,ER,JC

LAB NUMBER:41064
SAMPLE ID: I-2 /0950
DATE OF REPORT:02/28/94
UNITS: MILLIGRAMS/KILOGRAM (PPM)
SAMPLE PREP: EPA 3050

PARAMETER TTLC METALS	METHOD EPA	DETECTION LIMIT	RESULT
1. ARSENIC	6010	0.50	1. ND
2. BARIUM	6010	1.25	2. 62.4
3. CADMIUM	6010	0.50	3. 1.60
4. CHROMIUM	6010	1.00	4. 5.35
5. LEAD	6010	1.50	5. 13.3
6. MERCURY	7471	0.2	6. ND
7. SELENIUM	6010	3.75	7. ND
8. SILVER	6010	0.50	8. ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS OR LESS THAN DETECTION LIMIT.
TTLC = TOTAL THRESHOLD LIMIT CONCENTRATION.

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ACTIVITY: PWC CODE 930A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41802
SAMPLE ID: Q1-1
DATE OF REPORT:03/15/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET)EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.01	0.04
CHROMIUM (+6)	STD 312 B	0.006	0.08
LEAD	EPA 6010	0.03	0.88
ZINC	EPA 6010	0.01	3.03

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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Navy Public Works Center
[illegible] Engineering Laboratory Code 930
Naval Air Station North Island Bldg 788
San Diego, CA 92135
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ACTIVITY: PWC CODE 930A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41803
SAMPLE ID: Q1-4
DATE OF REPORT:03/15/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET)EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.01	0.03
CHROMIUM (+6)	STD 312 B	0.006	0.07
LEAD	EPA 6010	0.03	1.46
ZINC	EPA 6010	0.01	2.48

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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Environmental Engineering Laboratory Code 930
Naval Air Station North Island Bldg 788
San Diego, CA 92135
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ACTIVITY: PWC CODE 930A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41804
SAMPLE ID: Q 2-2
DATE OF REPORT:03/15/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET)EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.01	0.03
CHROMIUM (+6)	STD 312 B	0.006	0.02
LEAD	EPA 6010	0.03	1.04
ZINC	EPA 6010	0.01	1.50

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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LABORATORY DIRECTOR

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Naval Air Station North Island Bldg 788
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(619) 545-8431

ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41805
SAMPLE ID: Q 2-4
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.05	ND
CHROMIUM (+6)	STD 312B	0.006	0.05
LEAD	EPA 6010	0.015	3.45
ZINC	EPA 6010	0.05	4.04

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS, OR LESS THAN DETECTION LIMIT.
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41806
SAMPLE ID: Q 2-6
DATE OF REPORT:03/15/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET)EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.01	0.03
CHROMIUM (+6)	STD 312 B	0.006	0.02
LEAD	EPA 6010	0.03	1.60
ZINC	EPA 6010	0.01	2.03

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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LABORATORY DIRECTOR

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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41807
SAMPLE ID: Q 3-1
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.05	ND
CHROMIUM (+6)	STD 312B	0.006	0.02
LEAD	EPA 6010	0.15	2.62
ZINC	EPA 6010	0.05	3.0

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS, OR LESS THAN DETECTION LIMIT.
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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San Diego, CA 92135
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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41808
SAMPLE ID: Q 3-4
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.05	ND
CHROMIUM (+6)	STD 312B	0.006	0.01
LEAD	EPA 6010	0.15	2.04
ZINC	EPA 6010	0.05	2.28

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS, OR LESS THAN DETECTION LIMIT.
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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LABORATORY DIRECTOR

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San Diego, CA 92135
(619) 545-8431

ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41809
SAMPLE ID: Q 3-5
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.05	ND
CHROMIUM (+6)	STD 312B	0.006	0.13
LEAD	EPA 6010	0.15	1.93
ZINC	EPA 6010	0.05	2.26

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS, OR LESS THAN DETECTION LIMIT.
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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San Diego, CA 92135
(619) 545-8431

ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41810
SAMPLE ID: Q 4-7
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.05	ND
CHROMIUM (+6)	STD 312B	0.006	0.007
LEAD	EPA 6010	0.15	1.99
ZINC	EPA 6010	0.05	2.0

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS, OR LESS THAN DETECTION LIMIT.
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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San Diego, CA 92135
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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC,ER,JV

LAB NUMBER:41811
SAMPLE ID: Q 4-8
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
CADMIUM	EPA 6010	0.01	ND
CHROMIUM (+6)	STD 312B	0.006	0.009
LEAD	EPA 6010	0.03	1.18
ZINC	EPA 6010	0.01	2.11

REMARKS: ND - NONE DETECTED IN THIS ANALYSIS, OR LESS THAN DETECTION LIMIT.
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC

LAB NUMBER:41812
SAMPLE ID: Q 1-4
DATE OF REPORT:03/15/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET)EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
BARIUM	EPA 6010	0.03	4.96

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC

LAB NUMBER:41813
SAMPLE ID: Q 2-4
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METAL	METHOD	DETECTION LIMIT	RESULT
BARIUM	EPA 6010	0.13	3.98

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC

LAB NUMBER:41814
SAMPLE ID: Q 2-6
DATE OF REPORT:03/15/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET)EPA 3015

PARAMETER STLC METALS	METHOD	DETECTION LIMIT	RESULT
BARIUM	EPA 6010	0.03	3.56

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC

LAB NUMBER:41815
SAMPLE ID: Q 3-4
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METAL	METHOD	DETECTION LIMIT	RESULT
BARIUM	EPA 6010	0.13	4.39

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC

LAB NUMBER:41816
SAMPLE ID: Q 3-5
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METAL	METHOD	DETECTION LIMIT	RESULT
BARIUM	EPA 6010	0.13	4.71

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC

LAB NUMBER:41817
SAMPLE ID: Q 4-7
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METAL	METHOD	DETECTION LIMIT	RESULT
BARIUM	EPA 6010	0.13	3.92

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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San Diego, CA 92135
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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSIS COMPLETED:03/14/94
ANALYST: JC

LAB NUMBER:41818
SAMPLE ID: Q 4-8
DATE OF REPORT:03/16/94
UNITS: MILLIGRAMS/LITER (PPM)
SAMPLE PREP: STLC(WET) EPA 3015

PARAMETER STLC METAL	METHOD	DETECTION LIMIT	RESULT
BARIUM	EPA 6010	0.13	4.90

REMARKS:
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

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ACTIVITY: PWC CODE 930 A
TYPE OF SAMPLE: SOIL
DATE SAMPLE COLLECTED:02/12/94
DATE SAMPLE RECEIVED:03/03/94
DATE ANALYSES COMPLETED:03/20/94
DATE OF REPORT:03/21/94
ANALYST: JJC
METHOD: EPA 8080 (STLC)
RESULTS EXPRESSED AS: PCB IN MILLIGRAMS PER LITER (PPM)

LAB LOG NUMBER	SAMPLE ID	RESULT
41819	Q1-4	ND
41820	Q2-2	ND
41821	Q2-4	ND
41822	Q2-6	ND
41823	Q3-1	ND
41824	Q3-4	ND

REMARKS: ND = NONE DETECTED IN THIS ANALYSIS, OR LESS THAN DETECTION LIMIT.
DETECTION LIMIT = 0.002 mg/L
STLC = SOLUBLE THRESHOLD LIMIT CONCENTRATION

Joe Arlauskas MN

JOE ARLAUSKAS
LABORATORY DIRECTOR

[illegible]
[illegible]
[illegible]
[illegible]
75 Hawthorne Street
San Francisco CA 94105

Dear Ms. Diamond:

As we explained last week, on 10 Dec 1993 a contractor uncovered soil that appears to be contaminated with waste oil in DRMO Storage Yard No. 3. Our plan is to determine what the substance is and then make a determination on what to do with the "contaminated soil".

Please review the enclosed plans and return your comments to us by 3 Jan 1994. Once we have your approval we will issue a Delivery Order for the analysis. If you have any questions please call Chrisa Mitchell at 714-726-6607.

Sincerely,

J. P. CHESSUM
Colonel, U. S. Marine Corps
Assistant Chief of Staff,
Environment and Safety
By direction of
the Commanding General

Encl:
(1) Sample and Analysis Plan--Yard No. 3

Copy to:
Department of Toxic Substance Control
Regional Water Quality Control Board
COMCABWEST (AQ2/1AJ/1JJ)
SOUTHWESTNAVFACENGCOM

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	RECEIVED:	February 2, 1994
ATTN:	Mr. Richard Duffin	DATE ANALYZED:	February 9, 1994
PROJECT:	MCAS D.O.#60, Lab #DR3-A	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	8270

Base Neutral Extractable Organics by GC/MS
EPA METHOD 8270

PARAMETER NAME	RESULTS µg/kg (ppb)	D.L. µg/kg (ppb)	PARAMETER NAME	RESULTS µg/kg (ppb)	D.L. µg/kg (ppb)
Phenol	ND	660	3-Nitroaniline	ND	330
bis(2-Chloroethyl)ether	ND	660	Acenaphthene	ND	660
2-Chlorophenol	ND	660	2,4-Dinitrophenol	ND	3300
1,3-Dichlorobenzene	ND	660	Dibenzofuran	ND	660
1,4-Dichlorobenzene	ND	660	4-Nitrophenol	ND	3300
Benzyl Alcohol	ND	1320	2,4-Dinitrotoluene	ND	660
1,2-Dichlorobenzene	ND	660	Fluorene	ND	660
2-Methylphenol	ND	660	Diethylphthalate	ND	660
bis(2-chloroisopropyl)ether	ND	660	4-Chlorophanyl-phenyl ether	ND	660
n-Nitroso-di-n-propylamine	ND	660	4-Nitroaniline	ND	3300
4-Methylphenol	ND	660	4,6-Dinitro-2-methylphenol	ND	3300
Hexachloroethane	ND	660	n-Nitrosodiphenylamine	ND	660
Nitrobenzene	ND	660	4-Bromophenyl-phenyl ether	ND	660
Isophorone	ND	660	Hexachlorobenzene	ND	660
2-Nitrophenol	ND	660	Pentachlorophenol	ND	3300
2,4-Dimethylphenol	ND	660	Phenanthrene	ND	660
bis(2-Chloroethoxy)methane	ND	660	Anthracene	ND	660
2,4-Dichlorophenol	ND	660	Di-n-butylphthalate	ND	660
Benzoic Acid	ND	3300	Fluoranthene	ND	660
1,2,4-Trichlorobenzene	ND	660	Pyrene	ND	660
Naphthalene	ND	660	Butylbenzylphthalate	ND	660
4-chloroaniline	ND	1320	Benzo(a)anthracene	ND	660
Hexachlorobutadiene	ND	660	3,3'-Dichlorobenzidine	ND	1320
4-Chloro-3-methylphenol	ND	1320	Chrysene	ND	660
2-Methylnaphthalene	ND	660	bis(2-Ethylhexyl)phthalate	ND	660
Hexachlorocyclopentadiene	ND	1320	Di-n-octylphthalate	ND	660
2,4,6-Trichlorophenol	ND	660	Benzo(b)fluoranthene	ND	660
2,4,5-Trichlorophenol	ND	1000	Benzo(k)fluoranthene	ND	660
2-Chloronaphthalene	ND	660	Benzo(a)pyrene	ND	660
2-Nitroaniline	ND	3300	Indeno(1,2,3-cd)pyrene	ND	660
Dimethylphthalate	ND	660	Dibenzo(a,h)anthracene	ND	660
Acenaphthylene	ND	660	benzo(g,h,i)perylene	ND	660
2,6-Dinitrotoluene	ND	660			

Laboratory analysis performed by Advanced Technology Laboratories. CA State Certified Hazardous Waste Testing Laboratory.

ND = Not detected. Below indicated limit of detection.
D.L. = Method Detection Limit

Submitted By:

Channon C. Brown
Laboratory Director

FILE 34MCAS60.001

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	RECEIVED:	February 2, 1994
ATTN:	Mr. Richard Duffin	DATE ANALYZED:	February 9, 1994
PROJECT:	MCAS D.O.#60, Lab #DR3-B	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	8270

Base Neutral Extractable Organics by GC/MS
EPA METHOD 8270

PARAMETER NAME	RESULTS µg/kg (ppb)	D.L. µg/kg (ppb)	PARAMETER NAME	RESULTS µg/kg (ppb)	D.L. µg/kg (ppb)
Phenol	ND	660	3-Nitroaniline	ND	330
bis(2-Chloroethyl)ether	ND	660	Acenaphthene	ND	660
2-Chlorophenol	ND	660	2,4-Dinitrophenol	ND	3300
1,3-Dichlorobenzene	ND	660	Dibenzofuran	ND	660
1,4-Dichlorobenzene	ND	660	4-Nitrophenol	ND	3300
Benzyl Alcohol	ND	1320	2,4-Dinitrotoluene	ND	660
1,2-Dichlorobenzene	ND	660	Fluorene	ND	660
2-Methylphenol	ND	660	Diethylphthalate	ND	660
bis(2-chloroisopropyl)ether	ND	660	4-Chlorophenyl-phenyl ether	ND	660
n-Nitroso-di-n-propylamine	ND	660	4-Nitroaniline	ND	3300
4-Methylphenol	ND	660	4,6-Dinitro-2-methylphenol	ND	3300
Hexachloroethane	ND	660	n-Nitrosodiphenylamine	ND	660
Nitrobenzene	ND	660	4-Bromophenyl-phenyl ether	ND	660
Isophorone	ND	660	Hexachlorobenzene	ND	660
2-Nitrophenol	ND	660	Pentachlorophenol	ND	3300
2,4-Dimethylphenol	ND	660	Phenanthrene	ND	660
bis(2-Chloroethoxy)methane	ND	660	Anthracene	ND	660
2,4-Dichlorophenol	ND	660	Di-n-butylphthalate	ND	660
Benzoic Acid	ND	3300	Fluoranthene	ND	660
1,2,4-Trichlorobenzene	ND	660	Pyrene	ND	660
Naphthalene	ND	660	Butylbenzylphthalate	ND	660
4-chloroaniline	ND	1320	Benzo(a)anthracene	ND	660
Hexachlorobutadiene	ND	660	3,3'-Dichlorobenzidine	ND	1320
4-Chloro-3-methylphenol	ND	1320	Chrysene	ND	660
2-Methylnaphthalene	ND	660	bis(2-Ethylhexyl)phthalate	ND	660
Hexachlorocyclopentadiene	ND	1320	Di-n-octylphthalate	ND	660
2,4,6-Trichlorophenol	ND	660	Benzo(b)fluoranthene	ND	660
2,4,5-Trichlorophenol	ND	1000	Benzo(k)fluoranthene	ND	660
2-Chloronaphthalene	ND	660	Benzo(a)pyrene	ND	660
2-Nitroaniline	ND	3300	Indeno(1,2,3-cd)pyrene	ND	660
Dimethylphthalate	ND	660	Dibenzo(a,h)anthracene	ND	660
Acenaphthylene	ND	660	benzo(g,h,i)perylene	ND	660
2,6-Dinitrotoluene	ND	660			

Laboratory analysis performed by Advanced Technology Laboratories. CA State Certified Hazardous Waste Testing Laboratory.

ND = Not detected. Below indicated limit of detection.
D.L. = Method Detection Limit

Submitted By:

Chamion C. Brown
Laboratory Director

FILE 94MCAS60.002

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg 300, MCAS El Toro, Santa Ana, CA 92709-5006	RECEIVED:	February 2, 1994
ATTN:	Mr. Richard Duffin	DATE ANALYZED:	February 9, 1994
PROJECT:	MCAS D.O.#60, Lab #DR3-C	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	8270

Base Neutral Extractable Organics by GC/MS
EPA METHOD 8270

PARAMETER NAME	RESULTS µg/kg (ppb)	D.L. µg/kg (ppb)	PARAMETER NAME	RESULTS µg/kg (ppb)	D.L. µg/kg (ppb)
Phenol	ND	660	3-Nitroaniline	ND	330
bis(2-Chloroethyl)ether	ND	660	Acenaphthene	ND	660
2-Chlorophenol	ND	660	2,4-Dinitrophenol	ND	3300
1,3-Dichlorobenzene	ND	660	Dibenzofuran	ND	660
1,4-Dichlorobenzene	ND	660	4-Nitrophenol	ND	3300
Benzyl Alcohol	ND	1320	2,4-Dinitrotoluene	ND	660
1,2-Dichlorobenzene	ND	660	Fluorene	ND	660
2-Methylphenol	ND	660	Diethylphthalate	ND	660
bis(2-chloroisopropyl)ether	ND	660	4-Chlorophanyl-phenyl ether	ND	660
n-Nitroso-di-n-propylamine	ND	660	4-Nitroaniline	ND	3300
4-Methylphenol	ND	660	4,6-Dinitro-2-methylphenol	ND	3300
Hexachloroethane	ND	660	n-Nitrosodiphenylamine	ND	660
Nitrobenzene	ND	660	4-Bromophenyl-phenyl ether	ND	660
Isophorone	ND	660	Hexachlorobenzene	ND	660
2-Nitrophenol	ND	660	Pentachlorophenol	ND	3300
2,4-Dimethylphenol	ND	660	Phenanthrene	ND	660
bis(2-Chloroethoxy)methane	ND	660	Anthracene	ND	660
2,4-Dichlorophenol	ND	660	Di-n-butylphthalate	ND	660
Benzoic Acid	ND	3300	Fluoranthene	ND	660
1,2,4-Trichlorobenzene	ND	660	Pyrene	ND	660
Naphthalene	ND	660	Butylbenzylphthalate	ND	660
4-chloroaniline	ND	1320	Benzo(a)anthracene	ND	660
Hexachlorobutadiene	ND	660	3,3'-Dichlorobenzidine	ND	1320
4-Chloro-3-methylphenol	ND	1320	Chrysene	ND	660
2-Methylnaphthalene	ND	660	bis(2-Ethylhexyl)phthalate	ND	660
Hexachlorocyclopentadiene	ND	1320	Di-n-octylphthalate	ND	660
2,4,6-Trichlorophenol	ND	660	Benzo(b)fluoranthene	ND	660
2,4,5-Trichlorophenol	ND	1000	Benzo(k)fluoranthene	ND	660
2-Chloronaphthalene	ND	660	Benzo(a)pyrene	ND	660
2-Nitroaniline	ND	3300	Indeno(1,2,3-cd)pyrene	ND	660
Dimethylphthalate	ND	660	Dibenzo(a,h)anthracene	ND	660
Acenaphthylene	ND	660	benzo(g,h,i)perylene	ND	660
2,6-Dinitrotoluene	ND	660			

Laboratory analysis performed by Advanced Technology Laboratories. CA State Certified Hazardous Waste Testing Laboratory.

ND = Not detected. Below indicated limit of detection.
D.L. = Method Detection Limit

Submitted By: Channon C. Brown
Channon C. Brown
Laboratory Director

FILE 94MCAS60.003

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	DATE RECEIVED:	February 2, 1994
ATTN:	Mr. Doug Childers	DATE ANALYZED:	Februry 9, 1994
PROJECT:	MCAS D.O. #60, Lab #DR3-A	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	Title 22 Metals by TTLC

TITLE 22 METALS BY TTLC EXTRACTION METHOD

PARAMETER NAME EPA METHOD NO.	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)	PARAMETER NAME EPA METHOD NO.	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)
Antimony (7040)	ND	0.5	Mercury (7470)	ND	0.2
Arsenic (7061)	ND	0.5	Molybdenum (7480)	ND	0.5
Barium (7080)	5.5	0.5	Nickel (7520)	64.2	0.5
Beryllium (7090)	ND	0.5	Selenium (7741)	ND	0.5
Cadmium (7130)	ND	0.5	Silver (7760)	ND	0.5
Chromium, Total (7190)	1.3	0.5	Thallium (7840)	ND	0.5
Cobalt (7200)	ND	0.5	Vanadium (7910)	ND	0.5
Copper (7210)	5.5	0.5	Zinc (7950)	26.0	0.5
Lead, Total (7420)	8.6	0.5			

Laboratory analysis performed by Weber Laboratory. CA State Certified Hazardous Waste Testing Laboratory.

ND = Not detected. Below indicated limit of detection.
M.D.L. = Method Detection Limit

Submitted By:

Channon C. Brown
Laboratory Director

FILE: 94MCAS60.004

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	DATE RECEIVED:	February 2, 1994
ATTN:	Mr. Doug Childers	DATE ANALYZED:	Februry 9, 1994
PROJECT:	MCAS D.O. #60, Lab #DR3-B	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	Title 22 Metals by TTLC

TITLE 22 METALS BY TTLC EXTRACTION METHOD

PARAMETER NAME EPA METHOD NO.	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)	PARAMETER NAME EPA METHOD NO.	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)
Antimony (7040)	ND	0.5	Mercury (7470)	ND	0.2
Arsenic (7061)	ND	0.5	Molybdenum (7480)	ND	0.5
Barium (7080)	4.0	0.5	Nickel (7520)	54.3	0.5
Beryllium (7090)	ND	0.5	Selenium (7741)	ND	0.5
Cadmium (7130)	ND	0.5	Silver (7760)	ND	0.5
Chromium, Total (7190)	ND	0.5	Thallium (7840)	ND	0.5
Cobalt (7200)	ND	0.5	Vanadium (7910)	ND	0.5
Copper (7210)	6.4	0.5	Zinc (7950)	23.7	0.5
Lead, Total (7420)	9.4	0.5			

Laboratory analysis performed by Weber Laboratory. CA State Certified Hazardous Waste Testing Laboratory

ND = Not detected. Below indicated limit of detection.
M.D.L. = Method Detection Limit

Submitted By: Channon C. Brown
Laboratory Director

FILE: 94MCAS60.005

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	DATE RECEIVED:	February 2, 1994
ATTN:	Mr. Doug Childers	DATE ANALYZED:	Februry 9, 1994
PROJECT:	MCAS D.O. #60, Lab #DR3-C	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	Title 22 Metals by TTLC

TITLE 22 METALS BY TTLC EXTRACTION METHOD

PARAMETER NAME EPA METHOD NO.	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)	PARAMETER NAME EPA METHOD NO.	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)
Antimony (7040)	ND	0.5	Mercury (7471)	ND	0.2
Arsenic (7061)	ND	0.5	Molybdenum (7480)	1.9	0.5
Barium (7080)	4.0	0.5	Nickel (7520)	81.4	0.5
Beryllium (7090)	ND	0.5	Selenium (7741)	ND	[illegible]
Cadmium (7130)	ND	0.5	Silver (7760)	ND	0.5
Chromium, Total (7190)	1.1	0.5	Thallium (7840)	ND	0.5
Cobalt (7200)	ND	0.5	Vanadium (7910)	ND	0.5
Copper (7210)	6.2	0.5	Zinc (7950)	30.2	0.5
Lead, Total (7420)	10.8	0.5			

Laboratory analysis performed by Weber Laboratory. CA State Certified Hazardous Waste Testing Laboratory.

ND = Not detected. Below indicated limit of detection.
M.D.L. = Method Detection Limit

Submitted By:

Charlton C. Brown
Laboratory Director

FILE: 94MCAS60.006

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	DATE RECEIVED:	Februry 2, 1994
ATTN:	Mr. Doug Childers	DATE ANALYZED:	February 8, 1994
PROJECT:	MCAS D.O. #60, Lab #DR3-A	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	8080

PESTICIDES AND PCB EPA METHOD 8080

PARAMETER NAME EPA METHOD NO.	RESULTS µg/kg (ppb)	M.D.L. µg/kg (ppb)	PARAMETER NAME EPA METHOD NO.	RESULTS µg/kg (ppb)	M.D.L. µg/kg (ppb)
Alpha-BHC	ND	40	Aroclor-1016	ND	660
Beta-BHC	ND	40	Aroclor-1221	ND	1240
Delta-BHC	ND	40	Aroclor-1232	ND	660
Gamma-BHC (Lindane)	ND	40	Aroclor-1242	ND	660
Heptachlor	ND	40	Aroclor-1248	ND	660
Aldrin	ND	40	Aroclor-1254	ND	660
Heptachlor Epoxide	ND	40	Aroclor-1260	ND	660
Endosulfan I	ND	40	Aroclor-1262	ND	660
4,4'-DDE	ND	80			
Dieldrin	ND	80			
Endrin	ND	80			
Endosulfan II	ND	80			
4,4'-DDD	ND	80			
Endrin Aldehyde	ND	80			
Endosulfan Sulfate	ND	80			
4,4'-DDT	ND	80			
Methoxychlor	ND	340			
Chlordane	ND	340			
Toxaphene	ND	3400			

Laboratory analysis performed by Advanced Technology Laboratory. CA State Certified Hazardous Waste Testing Laboratory.

ND = Not detected. Below indicated limit of detection.
M.D.L. = Method Detection Limit

Submitted By:
Chamon C. Brown
Laboratory Director

FILE 94MCAS60.007

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	DATE RECEIVED:	Februry 2, 1994
ATTN:	Mr. Doug Childers	DATE ANALYZED:	February 8, 1994
PROJECT:	MCAS D.O. #60, Lab #DR3-B	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	8080

PESTICIDES AND PCB EPA METHOD 8080

PARAMETER NAME EPA METHOD NO.	RESULTS µg/kg (ppb)	M.D.L. µg/kg (ppb)	PARAMETER NAME EPA METHOD NO.	RESULTS µg/kg (ppb)	M.D.L. µg/kg (ppb)
Alpha-BHC	ND	40	Aroclor-1016	ND	660
Beta-BHC	ND	40	Araoclor-1221	ND	1340
Delta-BHC	ND	40	Aroclor-1232	ND	660
Gamma-BHC (Lindane)	ND	40	Aroclor-1242	ND	660
Heptachlor	ND	40	Aroclor-1248	ND	660
Aldrin	ND	40	Aroclor-1254	ND	660
Heptachlor Epoxide	ND	40	Aroclor-1260	ND	660
Endosulfan I	ND	40	Aroclor-1262	ND	660
4,4'-DDE	ND	80			
Dieldrin	ND	80			
Endrin	ND	80			
Endosulfan II	ND	80			
4,4'-DDD	ND	80			
Endrin Aldehyde	ND	80			
Endosulfan Sulfate	ND	80			
4,4'-DDT	ND	80			
Methoxychlor	ND	340			
Chlordane	ND	340			
Toxaphene	ND	3400			

Laboratory analysis performed by Advanced Technology Laboratory. CA State Certified Hazardous Waste Testing Laboratory.

ND = Not detected. Below indicated limit of detection.
M.D.L. = Method Detection Limit

Submitted By: Channon C. Brown
Laboratory Director

FILE 94MCAS60.008

REPORT

CLIENT:	Environmental Specialist	DATE REPORT:	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	DATE RECEIVED:	Februry 2, 1994
ATTN:	Mr. Doug Childers	DATE ANALYZED:	February 8, 1994
PROJECT:	MCAS D.O. #60, Lab #DR3-C	LABORATORY #:	93-3536-4415
MATRIX:	Soil	EPA METHOD:	8080

PESTICIDES AND PCB EPA METHOD 8080

PARAMETER NAME EPA METHOD NO.	RESULTS µg/kg (ppb)	M.D.L. µg/kg (ppb)	PARAMETER NAME EPA METHOD NO.	RESULTS µg/kg (ppb)	M.D.L. µg/kg (ppb)
Alpha-BHC	ND	40	Aroclor-1016	ND	660
Beta-BHC	ND	40	Araoclor-1221	ND	1340
Delta-BHC	ND	40	Aroclor-1232	ND	660
Gamma-BHC (Lindane)	ND	40	Aroclor-1242	ND	660
Heptachlor	ND	40	Aroclor-1248	ND	660
Aldrin	ND	40	Aroclor-1254	ND	660
Heptachlor Epoxide	ND	40	Aroclor-1260	ND	660
Endosulfan I	ND	40	Aroclor-1262	ND	660
4,4'-DDE	ND	80			
Dieldrin	ND	80			
Endrin	ND	80			
Endosulfan II	ND	80			
4,4'-DDD	ND	80			
Endrin Aldehyde	ND	80			
Endosulfan Sulfate	ND	80			
4,4'-DDT	ND	80			
Methoxychlor	ND	340			
Chlordane	ND	340			
Toxaphene	ND	3400			

Laboratory analysis performed by Advanced Technology Laboratory. CA State Certified Hazardous Waste Testing Laboratory

ND = Not detected. Below indicated limit of detection.
M.D.L. = Method Detection Limit

Submitted By: Channon C. Brown
Channon C. Brown
Laboratory Director

FILE: 94MCAS60.009

[illegible] MESA, CA 92628-3049 (714) [illegible]

REPORT

CLIENT:	Environmental Specialist	**DATE REPORT:**	February 18, 1994
ADDRESS:	Bldg. 300, MCAS El Toro, Santa Ana, CA 92709-5006	**DATE RECEIVED:**	February 02, 1994
ATTN:	Mr. Richard Duffin	**DATE ANALYZED:**	February 09, 1994
PROJECT:	MCAS D. O. #60, Lab #DR3-C	**LABORATORY #:**	93-3536-4415
MATRIX:	Soil	**EPA METHOD:**	TPH (M8015)

TPH (MOD8015) for Gasoline

LABORATORY I.D. GASOLINE	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)	LABORATORY I.D.	RESULTS mg/kg (ppm)	M.D.L. mg/kg (ppm)
DR3-A	ND	1.0			
DR3-B	ND	1.0			
DR3-C	ND	1.0			

Laboratory analysis performed by Weber Laboratory, CA State Certified Hazardous Waste Testing Laboratory.

ND = None detected. Below indicated limit of detection
M.D.L. = Method Detection Limit

Submitted By: [signature] for
Channon C. Brown
Laboratory Director

FILE 94MCAS60.010

This report applies only to the sample or samples investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used in whole or in part in any advertising or publicity matter without prior written authorization from these laboratories.