

Western Operations

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ENVIRONMENTAL
CONSULTANTS
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Clayton
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June 13, 1995

Mr. Don Anderson
BALLENA ISLE MARINA
1150 Ballena Boulevard
Alameda, California 94501

Clayton Project No. 57787.02

Subject: Quarterly Groundwater Sampling at Ballena Isle Marina Isle Facility
Located at 1150 Ballena Boulevard in Alameda, California

Dear Mr. Anderson:

Clayton Environmental Consultants, Inc. is pleased to present the quarterly groundwater sampling and analytical report for the groundwater sample collected at the Ballena Isle Marina facility located at 1150 Ballena Boulevard in Alameda, California (Figure 1). Clayton collected a groundwater sample from monitoring wells MW-1, on May 24, 1995. The monitoring well location is shown in Figure 2.

BACKGROUND

In September 1991 a 250-gallon waste oil underground storage tank (UST) was removed from the subject facility by the site owner. One soil sample was collected from the excavation pit and transported to Trace Analysis Laboratory (TAL). The analytical results identified various organic compounds in the soil sample. Analytical results for organic compounds are summarized in Table 1.

ACTIVE57787-02.REP

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Table 1

**Analytical Results for Soil Samples Collected by TAL in September 1991
All Concentrations in Milligrams per Kilogram (mg/kg)**

| Sample | TPH-D | TPH-G | TOG | Toluene | Ethylbenzene | Xylenes |
|--------|-------|-------|--------|---------|--------------|---------|
| 1 | 5,700 | 860 | 11,000 | 3.9 | 13 | 140 |

TPH-D Total petroleum hydrocarbons as diesel
TPH-G Total petroleum hydrocarbons as gasoline
TOG Total oil and grease, hydrocarbons

Subsequently, the excavation pit was overexcavated to remove petroleum hydrocarbon impacted soils. Two soil samples were collected from the overexcavated tank pit. One sample was collected from the north wall of the pit (SW-1) and the other sample was collected from the bottom of the pit (PB-1). The analytical results identified TPH-D and TPH-G in the soil samples from the excavation pit. Analytical results for petroleum hydrocarbons are summarized in Table 2.

Table 2

**Analytical Results for Soil Samples Collected by ENSR in May 1992
All Concentrations in Milligrams per Kilogram (mg/kg)**

| Sample | TPH-D | TPH-G | TOG | Benzene | Toluene | Ethylbenzene | Xylenes |
|--------|-------|-------|-------|---------|---------|--------------|---------|
| SW-1 | 2,200 | 91 | 5,300 | ND | ND | ND | 1.9 |
| PB-1 | 1,800 | 79 | 4,200 | ND | 1 | 0.84 | 9.2 |

ND = Not detected at or above the analytical detection limits

Further excavation of the contaminated soil was not possible because the excavation pit is bounded by a building foundation on the south and southwest, and utility vaults on the north.

In December 1992 Law/Crandall, Inc. drilled five soil borings and collected five samples (B-1 through B-5) from the surrounding area of the former waste oil UST. The soil samples were collected from approximately 10 feet below ground surface (bgs) and approximately 8 to 34 feet away from the excavation pit. In addition, one grab water sample was collected from hydropunch (HP-1) located approximately 8 feet

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northwest of the pit.

The soil and grab water samples were analyzed for TPH-G, TPH-D, BTEX, VOCs, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, TOG, and Metals.

TOG was detected in the soil samples ranging from 53 milligrams per kilogram (mg/kg) 110 mg/kg. The grab water sample contained a toluene concentration of 0.3 micrograms per liter ($\mu\text{g/L}$). The other analytes in the soil and grab water samples were not detected at or above the analytical detection limits.

On October 2, 1993, Hydrocarbon Consultants collected a grab water sample from the excavation pit (OP-1). Analytical results for the soil sample OP-1 are summarized in Table 3.

Table 3
Analytical Results for Grab Water Sample OP-1
Collected by Hydrocarbon Consultant in September 1993
All concentrations in $\mu\text{g/L}$

| Sample | TPH-D | TPH-G | TOG | Toluene | Ethylbenzene |
|--------|-------|-------|--------|---------|--------------|
| OP-1 | 9,100 | 580 | 43,000 | 3.9 | 19 |

In June, 1994 Clayton collected one soil and one groundwater samples to further define the extent of soil and possible groundwater contamination. To collect the groundwater samples one temporary well (TW-1) was installed near the former UST excavation pit. The well was placed in the estimated downgradient direction of the former tank location. The temporary well location is shown in Figure 2. The soil sample (SS-1) was collected from the south wall of the excavation pit at approximately 8 feet bgs. The soil sample was collected from the excavation wall to determine the extent of contamination within the pit. The soil and groundwater samples were analyzed for TPH-D, TPH-G, BTEX, TOG. In addition the groundwater sample was analyzed using EPA Method 160.1 for total dissolved solids (TDS).

Analytical results identified the following:

- TPH-D was detected in the soil sample at concentration of 460 mg/kg
- TPH-D was detected in the groundwater sample at concentration of 260 micrograms per liter ($\mu\text{g/l}$)

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- TPH-G was detected in the soil sample SS-1 at concentration of 0.3 mg/kg
- TOG was detected in the soil sample at concentration of 2,100 mg/kg.
- TPH-G and TOG were not detected in the groundwater sample
- BTEX was not detected in the soil or groundwater samples
- TDS was detected in the groundwater sample at concentration of 28,000 mg/l.

On July 19, 1994, Alameda County Health Care Services Agency (ACHCSA) requested that Ballena Isle Marina install a permanent monitoring well (MW-1) and collect quarterly groundwater samples for a period of 1 year.

In December 1994 Clayton installed the monitoring well MW-1 near the previous location of temporary well TW-1 to monitor the groundwater for the presence of petroleum hydrocarbons and TDS. The monitoring well location is shown in Figure 2. Analytical reports did not identify TPH-D, BTEX, and TOG in the soil or groundwater samples.

During the first quarterly groundwater sampling and analysis TPH-D or BTEX were not detected in the groundwater samples from monitoring well MW-1.

FIELD ACTIVITIES

Prior to collecting water samples, the depth to water and separate phase product thickness was measured in each well.

To collect a representative sample of the groundwater, the water was purged from each well by using a pump. Approximately four times the well volume was pumped from the wells.

The following parameters were noted during the sampling activities:

- Monitoring well identification
- Static water level
- Well depth
- Condition of water prior to purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler

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- Climatic conditions

The groundwater samples were collected after a sufficient volume of water had been purged for pH, temperature, and electrical conductivity to stabilize.

The water sample from each well was collected using a new disposable bailer. All equipment coming into contact with groundwater was thoroughly cleaned and decontaminated before use at the site.

Groundwater was decanted in clean laboratory-supplied containers that were closed, labeled, placed immediately into an ice chest, and transported to Clayton's state-certified laboratory for analysis. One trip blank was furnished in accordance with Clayton's quality assurance/quality control (QA/QC) program.

The samples were collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from the bailer to the sample containers. To document and trace samples from time of collection, a signed chain-of-custody record was filled out by the sampler and accompanies the samples through the laboratory analyses. The completed chain-of-custody was included with the analytical report from the laboratory. Detail of the groundwater sampling event is provided in the water sampling field survey forms (Attachment 1).

ANALYTICAL RESULTS

The groundwater samples were analyzed using the United States Environmental Protection Agency (USEPA) Method (modified) 8015 for TPH-D and the standard Method 5520F for total oil and grease (TOG).

TPH-D and TOG were not detected in the groundwater sample. The analytical reports are included in Attachment 2.

FINDINGS

Based on the analytical reports and our field observations our findings follow:

- TPH-D, and TOG were not detected in the groundwater sample.

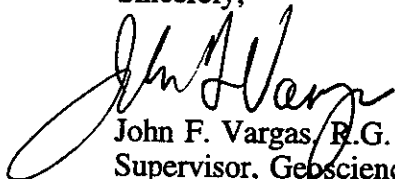
Based on our findings we recommend to submit a copy of this report ACHCSA for review. The next quarterly sampling event is scheduled for August 1995.

Mr. Don Anderson
Ballena Isle Marina
June 13, 1995

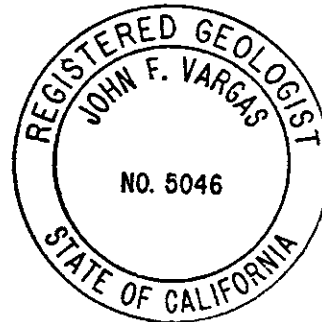
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If you have any questions, please call me or Dariush Dastmalchi at (510) 426-2600.

Sincerely,



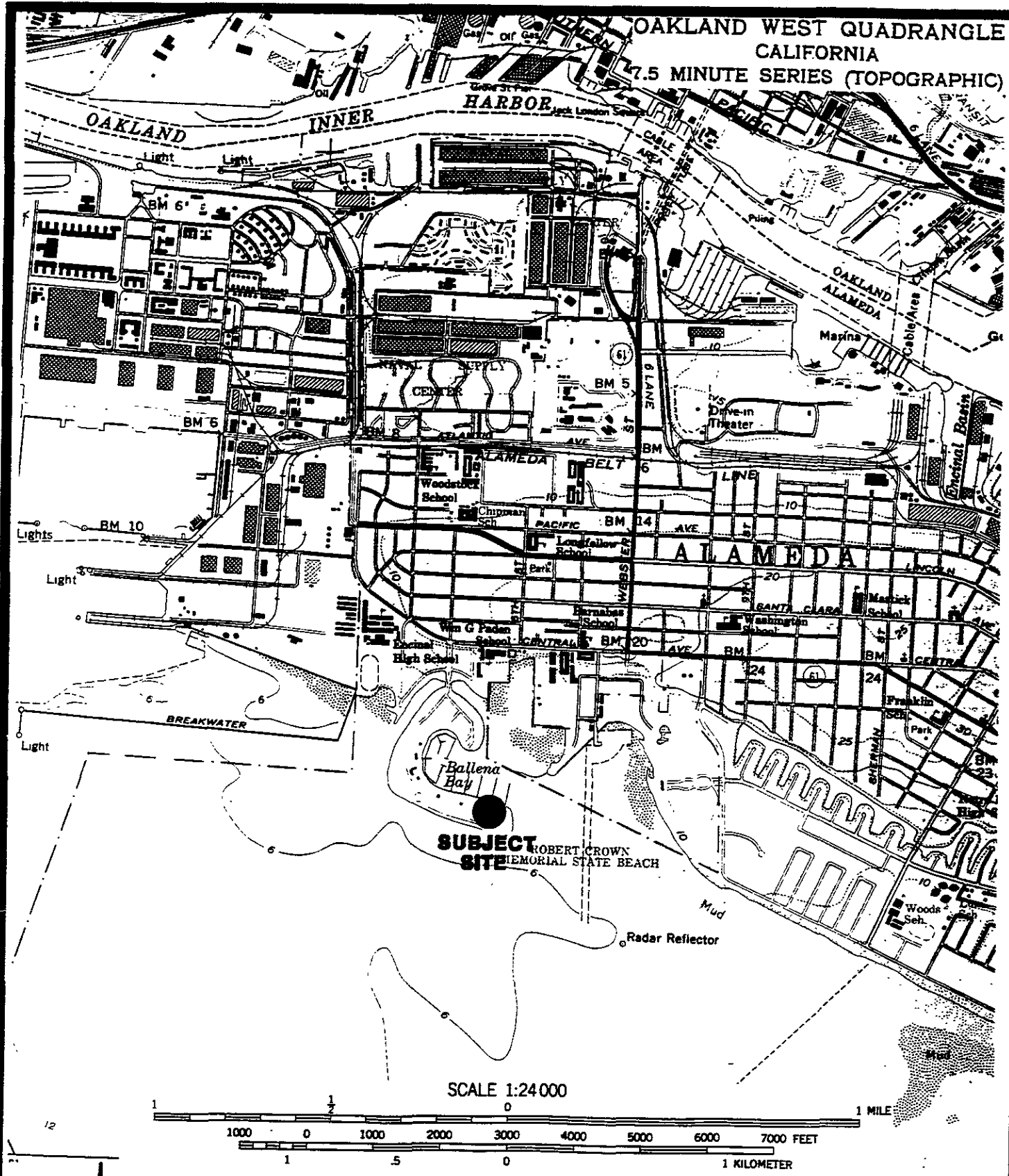
John F. Vargas, R.G.
Supervisor, Geosciences and Remediation
Western Operations



JFV/dd

FIGURES

OAKLAND WEST QUADRANGLE
 CALIFORNIA
 7.5 MINUTE SERIES (TOPOGRAPHIC)

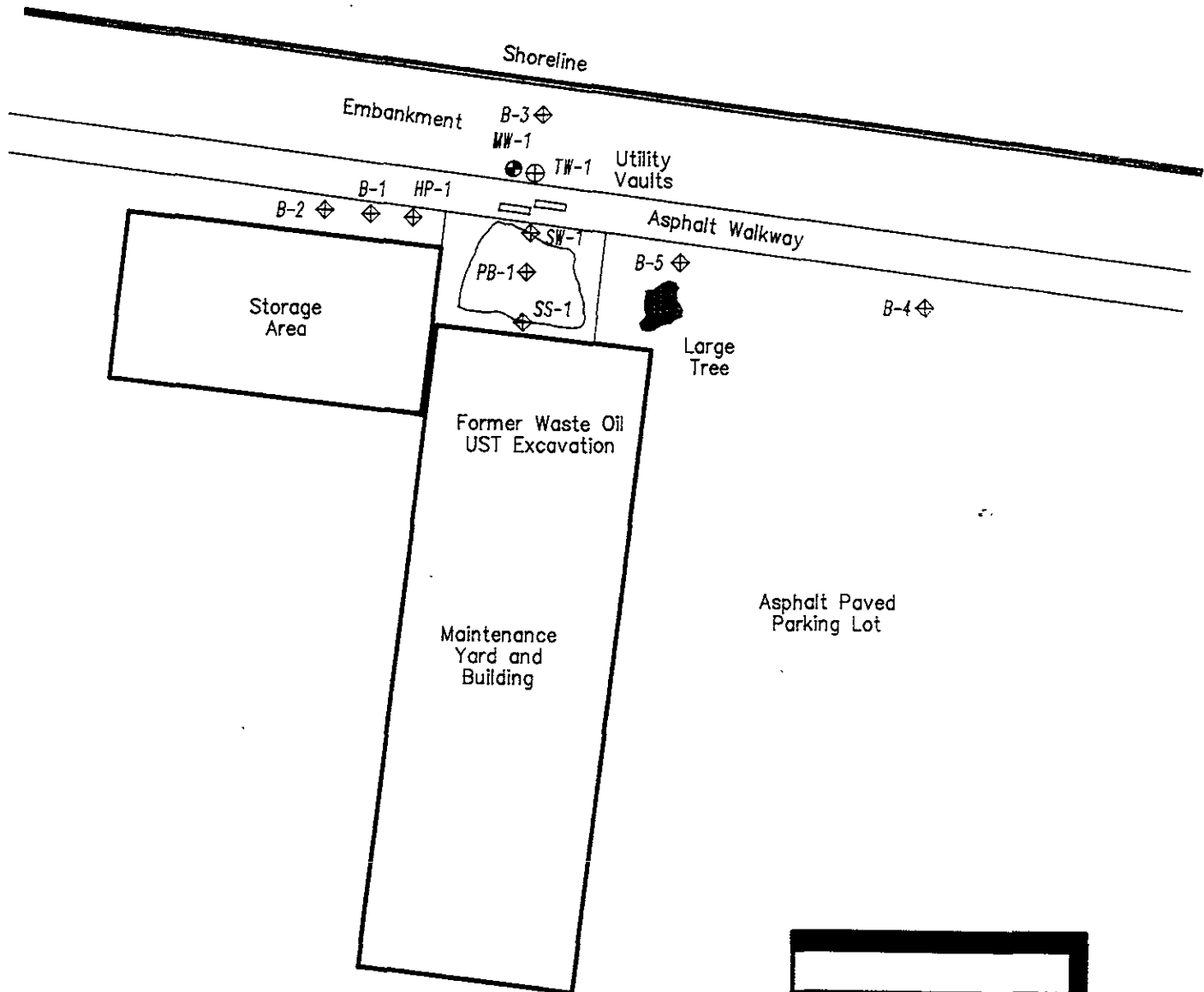


Site Location and Topographic Map
 BALLENA ISLE MARINA
 1150 Ballena Boulevard
 Alameda, California

Clayton Project No. 57787.00

Figure
 1
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Marina (Docks)



0 20
Approximate Scale in Feet

| | |
|---|---------------------------|
| ⊕ | Temporary Well |
| ● | Monitoring Well |
| ◇ | Previous Sample Locations |



Monitoring Well Locations
BALLENA ISLE MARINA
1150 Ballena Boulevard
Alameda, California
Clayton Project No. 57787.00

Figure
2
57787-00-17

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ATTACHMENT 1

**WATER SAMPLING FIELD SURVEY FORMS AND
GROUNDWATER DATA**

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # _____ Site: BALLENNA ISLE Date: MAY 24, 1995
 Well # MLW-1 Sampling Team: R. SILVA
 Sampling Method: DISPOSABLE BALLER
 Field Conditions: PARTLY CLOUDY, COOL, WINDY

Describe Equipment D-Con Before Sampling This Well: SUBMERSIBLE PUMP
LOOKS WASHED WITH DETERGENT, THEN TRIPLE RINSED.

Total Depth of Well: 17.84 feet Time: 1120 Depth to Water Before Pumping: 8.92 feet

Volume Height of Water Column: 8.92 feet * 0.16 (circled) = 1.43 gal * 5 = 7.15
 Diameter: 2-inch 4-inch Volume Purge Factor To Purge
 Depth Purging From: 17 feet Time Surging Begins: 1125

Notes on Initial Discharge: BROWNISH, SILTY

| Time | Volume Purged | pH | Conductivity | T | Notes |
|-------------|---------------|------------|--------------|-------------|--------------|
| <u>1127</u> | <u>2-GAL</u> | <u>5.0</u> | <u>2000+</u> | <u>16.0</u> | <u>CLEAR</u> |
| <u>1129</u> | <u>4-GAL</u> | <u>5.4</u> | <u>2000+</u> | <u>15.8</u> | <u>CLEAR</u> |
| <u>1131</u> | <u>6-GAL</u> | <u>5.3</u> | <u>2000+</u> | <u>15.7</u> | <u>CLEAR</u> |
| <u>1133</u> | <u>8-GAL</u> | <u>5.4</u> | <u>2000+</u> | <u>15.7</u> | <u>CLEAR</u> |
| _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |

ATTACHMENT 2

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLE

1252 Quarry Lane
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June 6, 1995

Mr. Dariush Dastmachi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 57787.00
Clayton Project No.: 95052.64

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on May 24, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after July 6, 1995, unless you have requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,



Harriotte A. Hurley, CIH
Director, Laboratory Services
San Francisco Regional Office

HAH/tjb

Attachments

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57787.00
Clayton Project No. 95052.64

Sample Identification: See Below
 Lab Number: 9505264
 Sample Matrix/Media: WATER
 Extraction Method: EPA 3510
 Method Reference: EPA 8015 (Modified)

Date Received: 05/24/95
 Date Extracted: 05/31/95
 Date Analyzed: 06/02/95

| Lab Number | Sample Identification | Date Sampled | TPH-D (ug/L) | Method Detection Limit (ug/L) |
|------------|-----------------------|--------------|--------------|-------------------------------|
| -01 | MW-1 | 05/24/95 | ND | 50 |
| -03 | METHOD BLANK | -- | ND | 50 |

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 57787.00
Clayton Project No. 95052.64

Sample Identification: See Below
 Lab Number: 9505264
 Sample Matrix/Media: WATER
 Extraction Method: EPA 413.2
 Method Reference: EPA 413.2
 Date Received: 05/24/95
 Date Extracted: 06/01/95
 Date Analyzed: 06/01/95

| Lab Number | Sample Identification | Date Sampled | Total Oil and Grease (mg/L) | Method Detection Limit (mg/L) |
|------------|-----------------------|--------------|-----------------------------|-------------------------------|
| -01 | MW-1 | 05/24/95 | ND | 1 |
| -03 | METHOD BLANK | -- | ND | 1 |

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

Quality Assurance Results Summary
Matrix Spike/Matrix Spike Duplicate Results
for
Clayton Project No. 95052.64

Quality Assurance Results Summary
for
Clayton Project No. 95052.64

Clayton Lab Number: 9505262-LCS
Ext./Prep. Method: EPA3510
Date: 05/31/95
Analyst: HYT
Std. Source: E950518-01W
Sample Matrix/Media: WATER

Analytical Method: EPA8015
Instrument ID: 02883
Date: 06/02/95
Time: 05:35
Analyst: GUD
Units: UG/L

| Analyte | Sample Result | Spike Level | Matrix Spike Result | MS Recovery (%) | Matrix Spike Duplicate Result | MSD Recovery (%) | Average Recovery (% R) | LCL (% R) | UCL (% R) | RPD (%) | UCL (%RPD) |
|---------|---------------|-------------|---------------------|-----------------|-------------------------------|------------------|------------------------|-----------|-----------|---------|------------|
| DIESEL | ND | 1,000 | 808 | 81 | 863 | 86 | 84 | 56 | 137 | 6.7 | 25 |

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SDR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 95052.64

Clayton Lab Number: 9505264-LCS
Ext./Prep. Method: EPA413.2
Date: 06/01/95
Analyst: HYT
Std. Source: E950601-01W
Sample Matrix/Media: WATER

Analytical Method: EPA413.2
Instrument ID: TAHYD
Date: 06/01/95
Time: 20:00
Analyst: GUD
Units: MG/L

| Analyte | Sample Result | Spike Level | Matrix Spike Result | MS Recovery (%) | Matrix Spike Duplicate Result | MSD Recovery (%) | Average Recovery (% R) | LCL (% R) | UCL (% R) | RPD (%) | UCL (%RPD) |
|----------------|---------------|-------------|---------------------|-----------------|-------------------------------|------------------|------------------------|-----------|-----------|---------|------------|
| OIL&GREASE(1R) | ND | 4.02 | 3.71 | 92 | 4.27 | 106 | 99 | 78 | 121 | 14 | 20 |

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

