



ENVIRONMENTAL
PROTECTION

97 SEP -4 PH 4: 01

8510 3749 LS

August 20, 1997

Mr. Dale Klettke
Alameda County Department of
Environmental Health
UST Local Oversight Program
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: **Second Quarter 1997 Monitoring Report**
Former Arco Station Service Station
706 Harrison Street
Oakland, California
STID 3749
Cambria #230-0116-008

Dear Mr. Klettke:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this second quarter 1997 ground water monitoring report for the site referenced above. Presented below are the second quarter 1997 activities, the anticipated third quarter 1997 activities, and the current hydrocarbon distribution in ground water.

SECOND QUARTER 1997 ACTIVITIES

Quarterly Ground Water Sampling: On June 18, 1997, Cambria gauged and sampled all onsite and offsite ground water monitoring wells. No measurable liquid-phase hydrocarbons (LPH) were detected in any of the wells. Table 1 summarizes ground water elevation data and analytic results. Figure 1 presents the ground water elevation contours and benzene concentrations. The analytical results of the ground water sampling are included in Attachment A.

Remediation System: Cambria is currently making arrangements for electricity to be supplied to the site in order to power the proposed remediation system.

ANTICIPATED THIRD QUARTER 1997 ACTIVITIES

Quarterly Ground Water Sampling: As requested by the Alameda County Department of Environmental Health, Cambria will gauge and collect water samples from each ground water monitoring well, and measure the thickness of any detected LPH. Cambria will tabulate the data and prepare a quarterly monitoring report.

CAMBRIA

ENVIRONMENTAL

TECHNOLOGY, INC.

1144 65TH STREET,

SUITE B

OAKLAND,

CA 94608

PH: (510) 420-0700

FAX: (510) 420-9170

Mr. Dale Klettke
August 20, 1997

CAMBRIA

HYDROCARBON DISTRIBUTION IN GROUND WATER

The current hydrocarbon distribution in ground water is consistent with historic site data. The current benzene distribution in ground water is shown in Figure 1. The onsite hydrocarbon concentrations in ground water are highest in wells MW-1 and MW-2, which are located adjacent to the former underground storage tank locations. Hydrocarbon concentrations are somewhat lower in up gradient well MW-4. Relatively low concentrations of 51 ppb TPHg and 22 ppb benzene in down gradient well MW-6, and 73 ppb TPHg and 0.55 ppb toluene in cross gradient well MW-7 were detected. Hydrocarbons were below detection limits in cross gradient well MW-3 and down gradient well MW-5.

We appreciate the opportunity to provide environmental services on behalf of Mr. Bo K. Gin. Please call if you have any questions or comments.

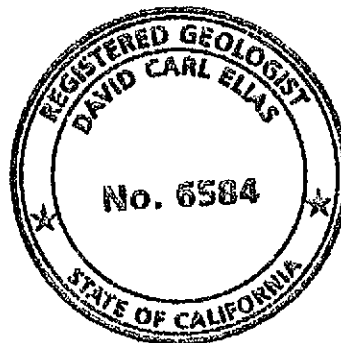
Sincerely,
Cambria Environmental Technology, Inc.



Maureen D. Feineman
Staff Geologist



David Elias, R.G.
Project Geologist



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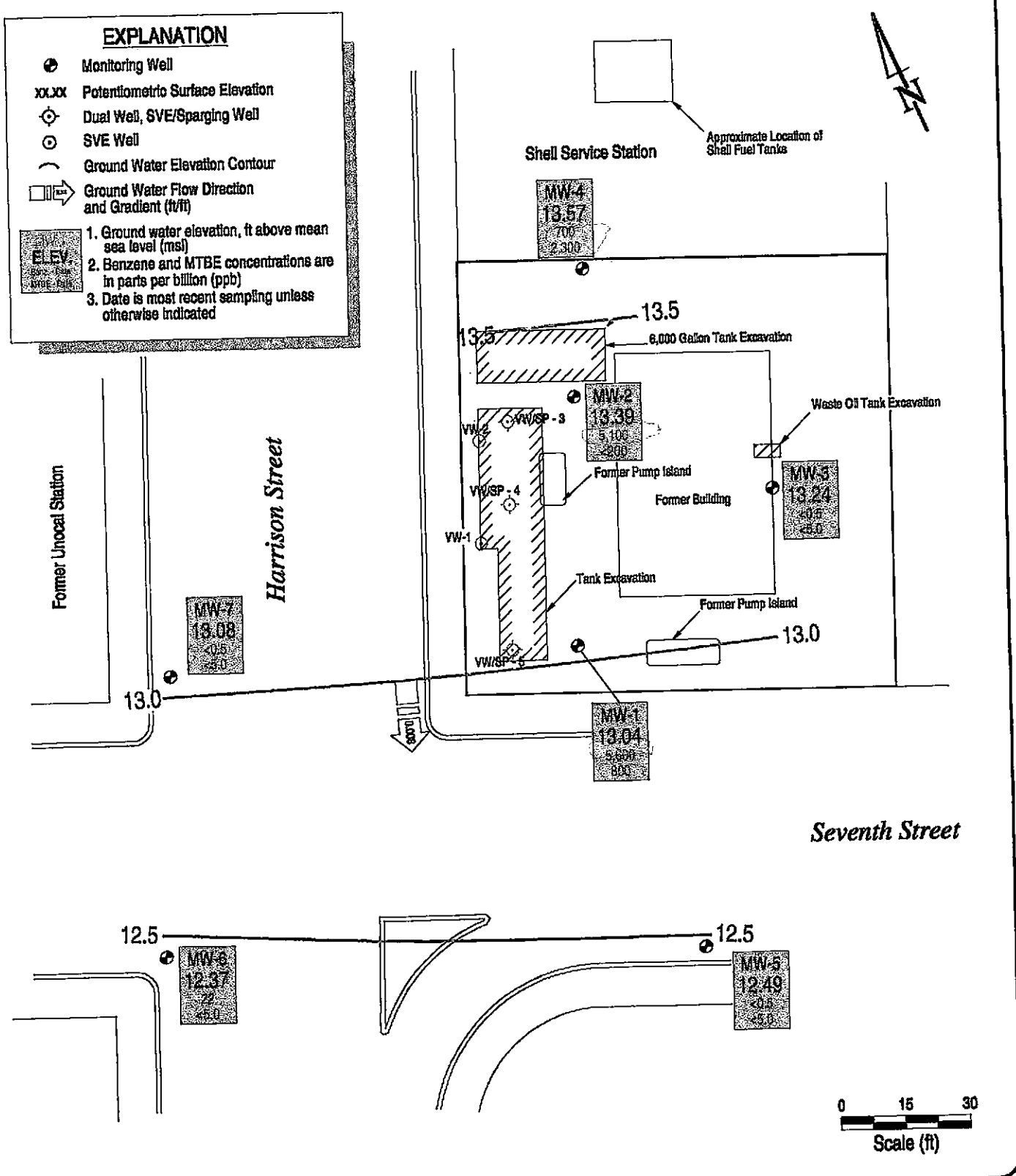
Attachments: A - Analytic Results for Ground Water Sampling

cc: Mr. Bo K. Gin, 288 11th Street, Oakland, CA 94706

EXPLANATION

- Monitoring Well
- XX.XX Potentiometric Surface Elevation
- ⊕ Dual Well, SVE/Sparging Well
- ⊙ SVE Well
- Ground Water Elevation Contour
- Ground Water Flow Direction and Gradient (ft/ft)

- ELEV**
1. Ground water elevation, ft above mean sea level (msl)
 2. Benzene and MTBE concentrations are in parts per billion (ppb)
 3. Date is most recent sampling unless otherwise indicated



CAMBRIA
Environmental Technology, Inc.

Former Arco Station
706 Harrison Street
Oakland, California

Ground Water Elevation
Contours
June 18, 1997

FIGURE
1

Table 1. Ground Water Analytic Data - Former Arco Station - 706 Harrison Street Oakland, California

| Well ID (TOC) | Date Sampled | Depth to Water (ft) | Ground Water Elevation (ft) | TPHg | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE ^a | Notes |
|------------------|-----------------|------------------------|-----------------------------------|--------|---------|---------|--------------|---------|-------------------|---------------|
| | | | | | | | | | | |
| MW-1 (29.15) | 8/13/93 | 17.40 | 11.75 | 20,000 | 8,500 | 640 | 280 | 440 | - | |
| | 12/14/93 | 17.27 | 11.88 | 17,000 | 9,200 | 1,200 | 4,400 | 540 | - | |
| | 4/15/94 | 17.00 | 12.15 | 9,500 | 3,600 | 530 | 160 | 280 | - | |
| | 12/29/94 | 16.40 | 12.75 | - | - | - | - | - | - | |
| | 7/19/96 | 15.83 | 13.32 | 17,000 | 5,200 | 1,100 | 330 | 530 | - | sheen/odor |
| | 1/27/97 | 13.58 | 15.57 | 30,000 | 9,800 | 1,300 | 790 | 880 | 400 | b, sheen/odor |
| | 6/18/97 | 16.11 | 13.04 | 19,000 | 5,600 | 1,400 | 510 | 770 | 1,200 (800) | b |
| MW-2 (30.51) | 8/13/93 | 17.05 | 13.46 | 34,000 | 6,800 | 10,000 | 740 | 3,900 | - | |
| | 12/14/93 | 18.28 | 12.23 | 16,000 | 3,200 | 4,200 | 500 | 1,700 | - | |
| | 4/15/94 | 18.10 | 12.41 | 23,000 | 2,500 | 4,200 | 470 | 1,800 | - | |
| | 12/29/94 | 17.40 | 13.11 | - | - | - | - | - | - | |
| | 7/19/96 | 16.72 | 13.79 | 90,000 | 7,300 | 14,000 | 1,600 | 7,300 | - | odor |
| | 1/27/97 | 14.89 | 15.62 | 63,000 | 7,100 | 13,000 | 1,600 | 7,100 | 500 | b, odor |
| | 6/18/97 | 17.12 | 13.39 | 52,000 | 5,100 | 10,000 | 1,400 | 6,000 | <200 | b |
| MW-3 (29.77) | 8/13/93 | 17.05 | 12.72 | <50 | <0.50 | <0.50 | <0.50 | <1.5 | - | |
| | 12/14/93 | 17.70 | 12.07 | <50 | <0.50 | <0.50 | <0.50 | <1.5 | - | |
| | 4/15/94 | 17.40 | 12.37 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | - | |
| | 12/29/94 | 16.80 | 12.97 | - | - | - | - | - | - | |
| | 7/19/96 | 16.28 | 13.49 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | - | |
| | 1/27/97 | 13.83 | 15.94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |
| | 6/18/97 | 16.33 | 13.24 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |

Table 1. Ground Water Analytic Data - Former Arco Station - 706 Harrison Street Oakland, California

| Well ID (TOC) | Date Sampled | Depth to Water (ft) | Ground Water Elevation (ft) | TPHg | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE* | Notes |
|------------------|-----------------|------------------------|-----------------------------------|-------|---------|---------|--------------|---------|---------------|-------|
| | | | | | | | | | | |
| MW-4 (31.18) | 12/16/94 | 18.10 | 13.08 | 2,500 | 32 | 6.5 | 4.5 | 17 | - | |
| | 12/29/94 | 17.95 | 13.23 | - | - | - | - | - | - | |
| | 7/19/96 | 17.38 | 13.80 | 3,300 | 520 | 39 | 67 | 60 | - | |
| | 1/27/97 | 15.25 | 15.93 | 4,500 | 860 | 55 | 100 | 91 | 1,100 | b |
| | 6/18/97 | 17.61 | 13.57 | 2,700 | 700 | 52 | 81 | 76 | 2,200 (2,300) | b |
| MW-5 (28.04) | 12/16/94 | 16.07 | 11.97 | <50 | 1.1 | <0.5 | <0.5 | 2.4 | - | |
| | 12/29/94 | 16.10 | 11.94 | - | - | - | - | - | - | |
| | 7/19/96 | 15.49 | 12.55 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |
| | 1/27/97 | 13.60 | 14.44 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |
| | 6/18/97 | 15.55 | 12.49 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |
| MW-6 (29.10) | 12/16/94 | 17.74 | 11.36 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | - | |
| | 12/29/94 | 17.40 | 11.70 | - | - | - | - | - | - | |
| | 7/19/96 | 16.60 | 12.50 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |
| | 1/27/97 | 14.88 | 14.22 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | c |
| | 6/18/97 | 16.73 | 12.37 | 51 | 22 | <0.5 | <0.5 | <0.5 | <5.0 | |
| MW-7 (29.67) | 12/16/94 | 17.07 | 12.60 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | - | |
| | 12/29/94 | 17.65 | 12.02 | - | - | - | - | - | - | |
| | 7/19/96 | 16.44 | 13.23 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |
| | 1/27/97 | 15.09 | 14.58 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <5.0 | |
| | 6/18/97 | 16.59 | 13.06 | 73 | <0.5 | 0.55 | <0.5 | <0.5 | <5.0 | d |

Table 1. Ground Water Analytic Data - Former Arco Station - 706 Harrison Street Oakland, California

| Well ID (TOC) | Date Sampled | Depth to Water (ft) | Ground Water Elevation (ft) | TPHg | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE ^a | Notes |
|-------------------------------------|-----------------|------------------------|-----------------------------------|------|---------|---------|--------------|---------|-------------------|-------|
| Concentrations in parts per billion | | | | | | | | | | |

Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
 MTBE = Methyl tert-butyl ether by EPA Method 8020
 parts per billion is equivalent to micrograms per liter in water
 TOC = Top of casing elevation with respect to mean sea level

Notes:

a = Result in parentheses indicates MTBE by EPA Method 8260.
 b = Analytic laboratory notes that unmodified or weakly modified gasoline is significant.
 c = Analytic laboratory notes that lighter gasoline range compounds are significant.
 d = Analytic laboratory notes that isolated peaks are present.

Benzene, ethylbenzene, toluene and xylenes analyzed by EPA Method 8020.
 Data prior to 12/16/94 provided by previous consultant.

ATTACHMENT A

Analytic Results for Ground Water Sampling



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

| | | |
|--|---|--------------------------|
| Cambria Environmental Technology 1144 65 th Street, Suite C Oakland, CA 94608 | Client Project ID: #23-116-8; Bo K. Gin Property | Date Sampled: 06/18/97 |
| | | Date Received: 06/19/97 |
| | Client Contact: David Elias | Date Extracted: 06/19/97 |
| | Client P.O: | Date Analyzed: 06/19/97 |

06/26/97

Dear David:

Enclosed are:

- 1). the results of 7 samples from your #23-116-8; Bo K. Gin Property project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/19/97

Matrix: Water

| Analyte | Concentration (mg/L) | | | Amount Spiked | % Recovery | | |
|---------------------|----------------------|------|------|---------------|------------|------|-----|
| | Sample # (77610) | MS | MSD | | MS | MSD | RPD |
| TPH (gas) | 0.0 | 92.0 | 94.8 | 100.0 | 92.0 | 94.8 | 3.0 |
| Benzene | 0.0 | 8.7 | 9.2 | 10.0 | 87.0 | 92.0 | 5.6 |
| Toluene | 0.0 | 9.1 | 9.6 | 10.0 | 91.0 | 96.0 | 5.3 |
| Ethyl Benzene | 0.0 | 9.3 | 9.8 | 10.0 | 93.0 | 98.0 | 5.2 |
| Xylenes | 0.0 | 28.0 | 29.3 | 30.0 | 93.3 | 97.7 | 4.5 |
| TPH (diesel) | 0 | 141 | 141 | 150 | 94 | 94 | 0.5 |
| TRPH (oil & grease) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/23/97-06/24/97

Matrix: Water

| Analyte | Concentration (mg/L) | | | Amount Spiked | % Recovery | | |
|---------------------|----------------------|-------|------|---------------|------------|-------|------|
| | Sample # (77799) | MS | MSD | | MS | MSD | RPD |
| TPH (gas) | 0.0 | 110.6 | 98.1 | 100.0 | 110.6 | 98.1 | 12.0 |
| Benzene | 0.0 | 9.5 | 9.2 | 10.0 | 95.0 | 92.0 | 3.2 |
| Toluene | 0.0 | 10.0 | 9.9 | 10.0 | 100.0 | 99.0 | 1.0 |
| Ethyl Benzene | 0.0 | 10.3 | 10.0 | 10.0 | 103.0 | 100.0 | 3.0 |
| Xylenes | 0.0 | 30.5 | 29.4 | 30.0 | 101.7 | 98.0 | 3.7 |
| TPH (diesel) | 0 | 146 | 146 | 150 | 97 | 97 | 0.4 |
| TRPH (oil & grease) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

