



September 16, 1998

REPORT  
of  
UPGRADIENT GROUNDWATER SAMPLING  
LINFORD PROPERTY  
2850 POPLAR STREET, OAKLAND, CA  
ASE JOB NO. 2971  
for  
Custom Alloy Scrap Sales  
2711 Union Street  
Oakland, California

Submitted by:  
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## 1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineers, Inc. (ASE)'s upgradient groundwater sampling for the property located at 2711 Union Street in Oakland, California (Figure 1). This property is currently being occupied by Custom Alloy Scrap Sales (CASS), a metal recycler. A letter from the Alameda County Health Care Services Agency (ACHCSA) dated August 4, 1998 (Appendix A) requested that groundwater samples be collected from two off-site properties in the site vicinity to determine the extent of groundwater contamination in the site vicinity and to determine whether there is an upgradient source for the site contamination. This report presents the methods and findings of the groundwater sampling at the Linford property located at 2850 Poplar Street which was one of the two properties where the off-site sampling was requested. CASS refused to grant access to ASE for the sampling of wells on their property located at 2730 Peralta Street. For this reason, only the sampling of the Linford wells is explained in this report. Although the August 4, 1998 letter from the ACHCSA requested analysis for volatile organic compounds (VOCs) by EPA Method 8240, the ACHCSA agreed to a request by ASE to change the analysis to an EPA Method 8010 as a cost saving measure.

## 2.0 SITE HISTORY

The site was previously occupied by Gardiner Manufacturing as a machining and press operation. Beginning in 1985, CASS occupied the property as a scrap metal recycling operation. CASS is currently the tenant on the property.

In August 1990, MacKinnon Environmental Consulting (MacKinnon) of Walnut Creek, California conducted a limited soil assessment at the site. Up to 4,000 parts per million (ppm) oil and grease (O&G) and 2,600 ppm total petroleum hydrocarbons as diesel (TPH-D) were detected in the soil samples collected during the assessment. No analyses VOCs was performed during the MacKinnon assessment.

In March 1996, ASE drilled ten soil borings at the site (Figure 2). Up to 4,300 ppm TPH-D, 4,500 ppm O&G, 0.01 ppm toluene, 0.0092 ppm ethylbenzene, 0.011 ppm total xylenes, 0.055 ppm cis-1,2-dichloroethene (cis-1,2-DCE), 0.018 ppm trans-1,2-dichloroethene (trans-1,2-DCE) and 0.052 ppm trichloroethene (TCE) were detected in the soil samples collected during this assessment. Up to 7,100 parts per billion (ppb) O&G, 43 ppb vinyl chloride, 2.1 ppb 1,1-dichloroethene (1,1-DCE), 22 ppb 1,1-

dichloroethane (1,1-DCA), 78 ppb cis-1,2-DCE, 15 ppb trans-1,2-DCE, 100 ppb TCE, 1 ppb tetrachloroethene (PCE), 21 ppb chlorobenzene, and 39 ppb 1,2-dichlorobenzene were detected in groundwater samples collected from the site. On June 17, 1996, Ms. Susan Hugo of the ACHCSA prepared a letter requesting additional soil and groundwater assessment activities at the site. Analytical results for soil and groundwater samples are tabulated in Tables One through Five.

In September 1996, ASE drilled four soil borings at the site and installed groundwater monitoring wells MW-1 through MW-4 in the borings. Up to 350 ppm TPH-D were detected in the soil samples collected from borings MW-2 and MW-4, although the chromatogram pattern on these samples did not resemble the diesel standard. Motor oil range hydrocarbons were detected in the soil samples collected from boring MW-4. 0.048 ppm fluorene was detected in the soil sample collected from 6.0-feet below ground surface (bgs) in boring MW-4. Relatively high VOC concentrations were detected in groundwater samples collected at the site. The PCE, benzene, vinyl chloride, cis-1,2-DCE, trans-1,2-DCE and chlorobenzene concentrations exceeded California Department of Toxic Substances Control (DTSC) maximum contaminant levels (MCLs) for drinking water. The highest concentrations were detected in groundwater samples collected from monitoring well MW-2.

Groundwater samples were collected from the site wells in January, April and July 1997. The analytical results for groundwater samples are tabulated in Tables Four and Five. Depth to groundwater measurements and groundwater elevation data are tabulated in Table Six.

In February 1998, ASE prepared a Risk-Based Corrective Action (RBCA) assessment for the site. This RBCA evaluated risk related to the site contamination for several scenarios such as exposure of construction workers to contaminants and contaminants in soil and groundwater volatilizing into indoor and outdoor air. No unacceptable risks were found except for the on-site volatilization from groundwater to indoor air scenario (a scenario that does not currently exist) and an off-site volatilization from groundwater to indoor air scenario for the CASS property across Poplar Street. In both scenarios, vinyl chloride was the compound providing an unacceptable risk. Based on these results, the ACHCSA issued a letter requesting a groundwater monitoring well off-site downgradient of the site.

In June 1998, ASE installed groundwater monitoring well MW-5 in Poplar Street northwest of the site. Several VOCs were detected in groundwater

samples collected from monitoring well MW-5, including TCE, 1,1-DCE, and 1,1,1-trichloroethane (1,1,1-TCA) concentrations higher than concentrations detected on-site. This information along with the groundwater flow to the west suggests that there is an upgradient source of contamination. With a groundwater flow direction to the west, the Linford property located at 2850 Poplar Street appeared to be directly upgradient of the monitoring well MW-5.

Based on this information, Ms. Eva Chu of the ACHCSA requested that groundwater samples be collected from monitoring wells MW-3 and MW-4 on the Linford property at 2850 Poplar Street and monitoring wells MW-4 and MW-6 on the CASS property located at 2730 Peralta Street.

### **3.0 LINFORD MONITORING WELL SAMPLING**

On August 24, 1998, ASE geologist Robert Kitay, R.G. collected groundwater samples from monitoring wells MW-3 and MW-4 on the Linford property. Prior to sampling, the wells were purged of four well casing volumes of groundwater. The pH, temperature and conductivity of the purge water were monitored during evacuation, and samples were not collected until these parameters stabilized. Samples were collected from each well using pre-cleaned polyethylene bailers. The groundwater samples were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, labeled, placed in protective foam sleeves, and stored on ice for transport to Chromalab, Inc. of Pleasanton, California under chain of custody. Well sampling purge water was contained in sealed and labeled 55-gallon steel drums and stored on-site for handling by the client at a later date. See Appendix B for a copy of the Field Logs.

### **4.0 ANALYTICAL RESULTS FOR GROUNDWATER**

The groundwater samples were analyzed by Chromalab for VOCs by EPA Method 8010. The analytical results are tabulated in Table Seven, and copies of the certified analytical report and chain of custody form are included in Appendix C.

TCE was detected in groundwater samples collected from both monitoring wells MW-3 and MW-4 at 1,100 ppb and 23 ppb, respectively. Groundwater samples from monitoring well MW-3 also contained 18 ppb cis-1,2-DCE and 5.6 ppb 1,1,2-trichloroethane.

## 5.0 DISCUSSION OF ANALYTICAL RESULTS

The highest VOC concentrations detected in the two Linford monitoring wells was in monitoring well MW-3, the upgradient well on the Linford property. There are no operations on the Linford property upgradient of monitoring well MW-3, only a small amount of asphalt parking lot. In addition, Mr. Robert Linford of the Linford Company stated to ASE that they have never used TCE or any other similar solvents on their property. Based on this information, it appears that there is a source of the TCE contamination in groundwater upgradient of the Linford site. It is also clear that TCE and possibly other VOCs are continuing to flow under the Linford site onto the 2711 Union Street property. It is ASE's opinion that the elevated VOCs in groundwater samples collected from monitoring well MW-5 for the 2711 Union Street property are most likely related to this upgradient source, upgradient of the Linford property. Further discussion will be presented below as to whether all or most of VOC contamination in groundwater on the 2711 Union Street property may be attributed to off-site upgradient sources.

## 6.0 AREA SURVEY

On September 9, 1998, ASE conducted a drive by survey to determine where an upgradient source of TCE may be located. Since ASE was unable to collect samples from the CASS wells at 2730 Peralta Street, ASE does not know how extensive the upgradient source area may be and how it may affect wells further to the north. However, Union Street is located directly upgradient of the Linford property. Most of the properties located on the southeast side of Union Street across from the Linford site are residential; however, there is one old commercial/industrial building occupied by Modern Mail and Courier Service located directly upgradient of the Linford site. Although it is unlikely that a courier service would be a source of TCE contamination, it is possible that a former user of the property could be a source.

The next block southeast of Union Street is Magnolia Street. Most of the properties on Magnolia are residential; however, there is an industrial property with no obvious address located between 2910 and 2918 Magnolia Street which appeared to be using chemicals. Workers were outside wearing respirators and chemical resistant suits and appeared to be handling 5 gallon buckets of chemicals. This property may be the back of one of the businesses on Adeline Street between 28th and 30th (possibly 2923 Adeline Street but it is difficult to tell). There was no obvious name on this property. This property is upgradient of the Linford

and 2711 Union Street property and should be considered a potential source of the TCE contamination.

A company named Consolidated Electrical Distributors, which also had the name Allen-Bradley Motor Control Headquarters on the building, was also located between Magnolia Street and Adeline Street southwest of the property described above. Although this property would not be directly upgradient of the Linford site, there appeared to be chemical usage at this property, and this property is approximately upgradient of the 2711 Union Street property.

A property located at 1201 32nd Street appeared to be vacant but had the word "Linen" on the building. It is possible that this property may have been a dry-cleaning operation. TCE is a breakdown product of PCE which is used as a common dry cleaning solvent. This property is approximately upgradient of both the Linford property and the 2711 Union Street property.

Other businesses in the site vicinity that could be sources of contamination would be:

\* A company named Chemicals For Research is located at 2928 Poplar Street which is not directly upgradient of monitoring well MW-3 on the Linford property but is possibly upgradient of other portions of the Linford property and 2711 Union Street.

\* A company was located at 2905 Union Street which did not have a full company name printed on the building but had "& Bolero Co." printed on the building. This property did not have any obvious chemical usage or storage (in fact it appeared to be a warehouse), but it is located approximately upgradient of the Linford property.

Finally, a cleaners was formally located on the southwest corner of Union and 28th Street. This site is directly upgradient of the 2711 Union Street property but is a fair distance cross-gradient of monitoring well MW-3 on the Linford property. A monitoring well was formally located on this site which was related to the removal of underground stoddard solvent tanks at the site. Relatively low concentrations of hydrocarbons were detected in groundwater samples collected from the site monitoring well. There were never any analyses for VOCs in groundwater samples collected from the site well. This case was closed by the ACHCSA and the monitoring well was destroyed. This site may be a source of VOCs to groundwater at the 2711 Union Street property but is not likely to be a source for the upgradient



TCE contamination in groundwater samples collected from monitoring well MW-3 on the Linford property.

Subsurface sewer lines should also be considered a potential source of groundwater contamination in the site vicinity, but it is impractical, if not impossible, to trace contamination that may have emanated from sewer lines to a source property.

## 7.0 DISCUSSION OF SOURCES OF ON-SITE CONTAMINATION

The analytical results for groundwater samples collected from monitoring well MW-3 on the Linford property contained VOCs, including 1,100 ppb TCE. This well is located near the upgradient property line of the Linford property, indicating that the source of the VOCs detected in this well is located upgradient of the Linford property. Since this well was not related to any specific source area, and was essentially a random upgradient location, it is not possible to know the highest TCE concentrations present along the property line, and higher concentrations may exist. It is ASE's opinion that the unexpectedly high VOC concentrations detected in monitoring well MW-5 for the 2711 Union Street project are related to an upgradient source of contamination, probably the same source responsible for the VOCs in monitoring well MW-3 on the Linford property. Unfortunately, CASS did not grant ASE access to their well MW-6 on the 2730 Union Street property which may have provided additional data to prove an off-site source for the groundwater contamination in monitoring well MW-5.

Since VOCs were detected in groundwater samples collected from monitoring well MW-3 on the 2711 Union Street property, including the highest PCE concentrations detected on-site, ASE believes that there is an upgradient source of contamination east of this area which is also affecting the site. Additional evidence of this is that no VOCs were detected in soil samples collected from this boring or from other borings on the eastern half of the property. It is likely that all of the PCE detected at the site, as well as several hundred ppb of the TCE detected at the site, are related to an off-site source east of monitoring well MW-3 on the 2711 Union Street property.

The majority, and most significant, of the non-TCE/non-PCE compounds detected at the site are related to the breakdown of the PCE and/or TCE. Some of the petroleum hydrocarbons which have been detected at the site such as oil, diesel and gasoline appear to have provided the hydrogen ions

necessary to assist with the degradation of the VOCs at the site and explain why more compounds were detected in on-site wells than in off-site wells.

Since few VOCs were detected in soil samples collected from the 2711 Union Street property, ASE has attempted to determine whether there is any reason to believe that there is any source for the groundwater contamination on the 2711 Union Street property. Only relatively low VOC concentrations were detected in soil samples collected from the 2711 Union Street property, primarily in soil samples from borings BH-D and BH-F. No groundwater samples were collected from either of these borings. Although these VOC concentrations in soil are low, it is possible that these concentrations may represent an on-site source area. The highest TCE concentrations in groundwater samples collected on the 2711 Union Street property were in groundwater samples collected from monitoring well MW-1, which is located downgradient of the BH-D/BH-F area. However, there are no groundwater sampling points between monitoring well MW-1 and the eastern property in the direct upgradient direction. Therefore, it is possible that TCE could flow from upgradient locations east of the site to monitoring well MW-1 without being detected by other groundwater sampling points on-site.

Given all of the available information gathered from this site, it is ASE's opinion that the most significant VOC contamination detected at the site, including (a) the high TCE concentrations detected in groundwater samples collected from monitoring well MW-5 in Poplar Street, (b) all of the PCE detected on-site, and (c) at least several hundred ppb, if not the vast majority, of the TCE detected at the site, are related to off-site upgradient sources. In fact, there are probably at least two upgradient sources of contamination. One related to the PCE and TCE that has been detected in monitoring wells MW-3 on the site, and a second source related to the TCE detected in monitoring well MW-5 and monitoring well MW-3 on the Linford property.

Although it is possible that some of the TCE contamination in groundwater may be related to an on-site source in the vicinity of borings BH-D and BH-F, given the extent of the VOC contamination in groundwater which has traveled beneath the Linford property from an upgradient source and the high VOC concentrations related to this off-site contamination, any VOC contamination which may have originated on the 2711 Union Street property appears to be minor in comparison.

## **8.0 CONCLUSIONS AND RECOMMENDATIONS**

It is ASE's opinion that there is a significant upgradient source of contamination which is responsible for the high TCE concentrations in groundwater samples collected from monitoring well MW-5 in Poplar Street as well as for TCE concentrations detected in groundwater samples collected from monitoring well MW-3 on the Linford property located at 2850 Poplar Street. It is possible that this upgradient source may be responsible for most, if not all, of the TCE contamination detected in groundwater at the site, although there is a potential source area at the site. In addition, it appears that there is a second upgradient source east of the site which is contributing PCE, as well as several hundred ppb TCE, to groundwater beneath the site.

It is ASE's opinion that there is a significant regional VOC groundwater problem in the site vicinity, and at least two upgradient, off-site sources of VOCs are contributing to VOC contamination in groundwater in the site vicinity. Although it is possible that some TCE detected in groundwater beneath the site may be related to an on-site source, it is ASE's opinion that there are more significant sources of both TCE and PCE upgradient of the site. Several potential source properties are listed in section 6.0 of this report.

## **9.0 RECOMMENDATIONS**

Although ASE is still unable to rule out the 2711 Union Street property as a potential source of VOCs to groundwater in the site vicinity, it is ASE's opinion that there are at least two other sources of VOCs to groundwater upgradient of the site. In particular, the upgradient source of TCE east of the Linford property could be particularly significant to the regional groundwater quality.

Our client feels, and ASE agrees, that it is unfair to burden our client with additional costs associated with determining exactly which property is the major source of the regional VOC contamination originating upgradient of the site. ASE feels that future responsibility of our client at this site should be limited only to periodic groundwater monitoring, specifically semi-annual for one year and annual monitoring the following year.

In addition, ASE recommends to the ACHCSA and RWQCB that they review files in their possession to determine which upgradient property may be the significant source of VOCs to groundwater. Since there are residences upgradient of the Linford property which may lay over very high VOC

concentrations, further investigation to determine the source of these VOCs by the regulatory agencies would be prudent.

## 10.0 REPORT LIMITATIONS

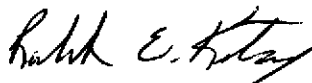
The results of this assessment represent conditions at the time of groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

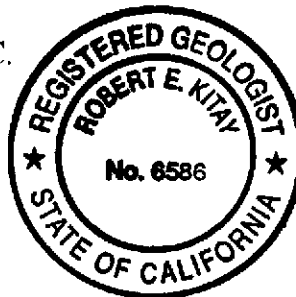
Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



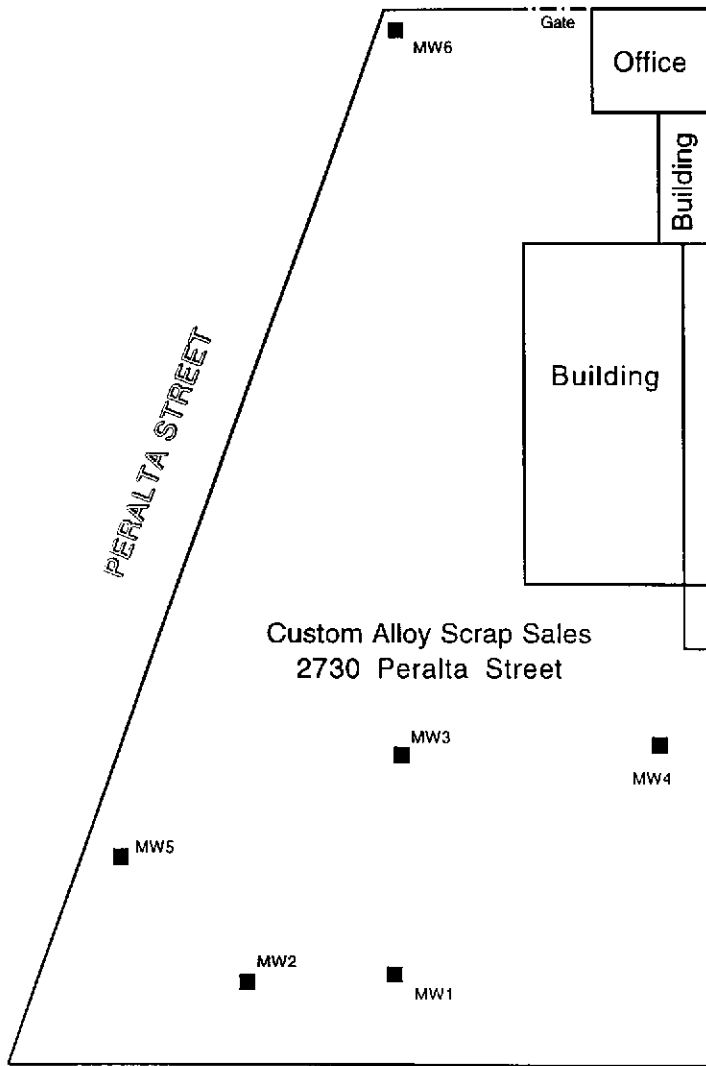
Robert E. Kitay, R.G., R.E.A.  
Senior Geologist



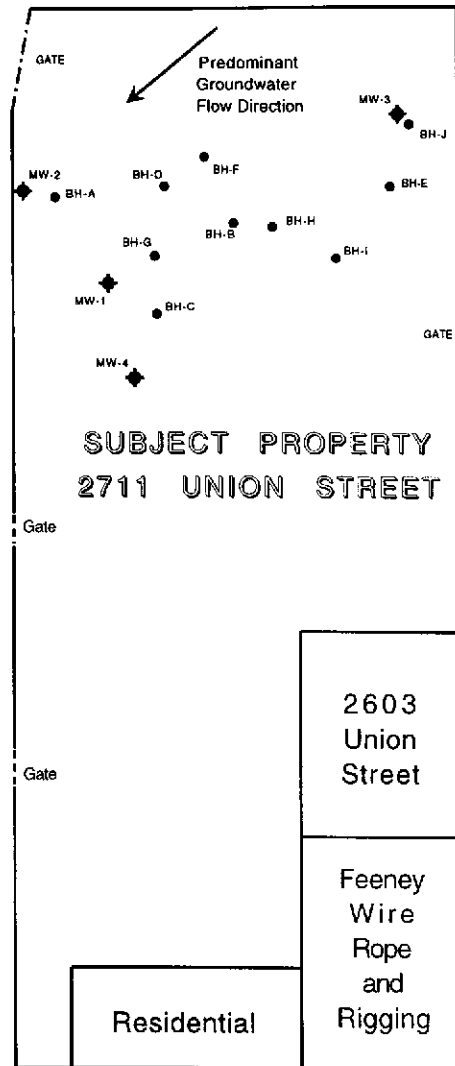
Attachments: Figures 1 through 3  
Appendices A through C

28TH STREET

PERALTA STREET



Custom Alloy Scrap Sales  
2730 Peralta Street



SUBJECT PROPERTY  
2711 UNION STREET

2603  
Union  
Street

Feeney  
Wire  
Rope  
and  
Rigging

Residential

26TH STREET



NORTH

SCALE

1" = 100'

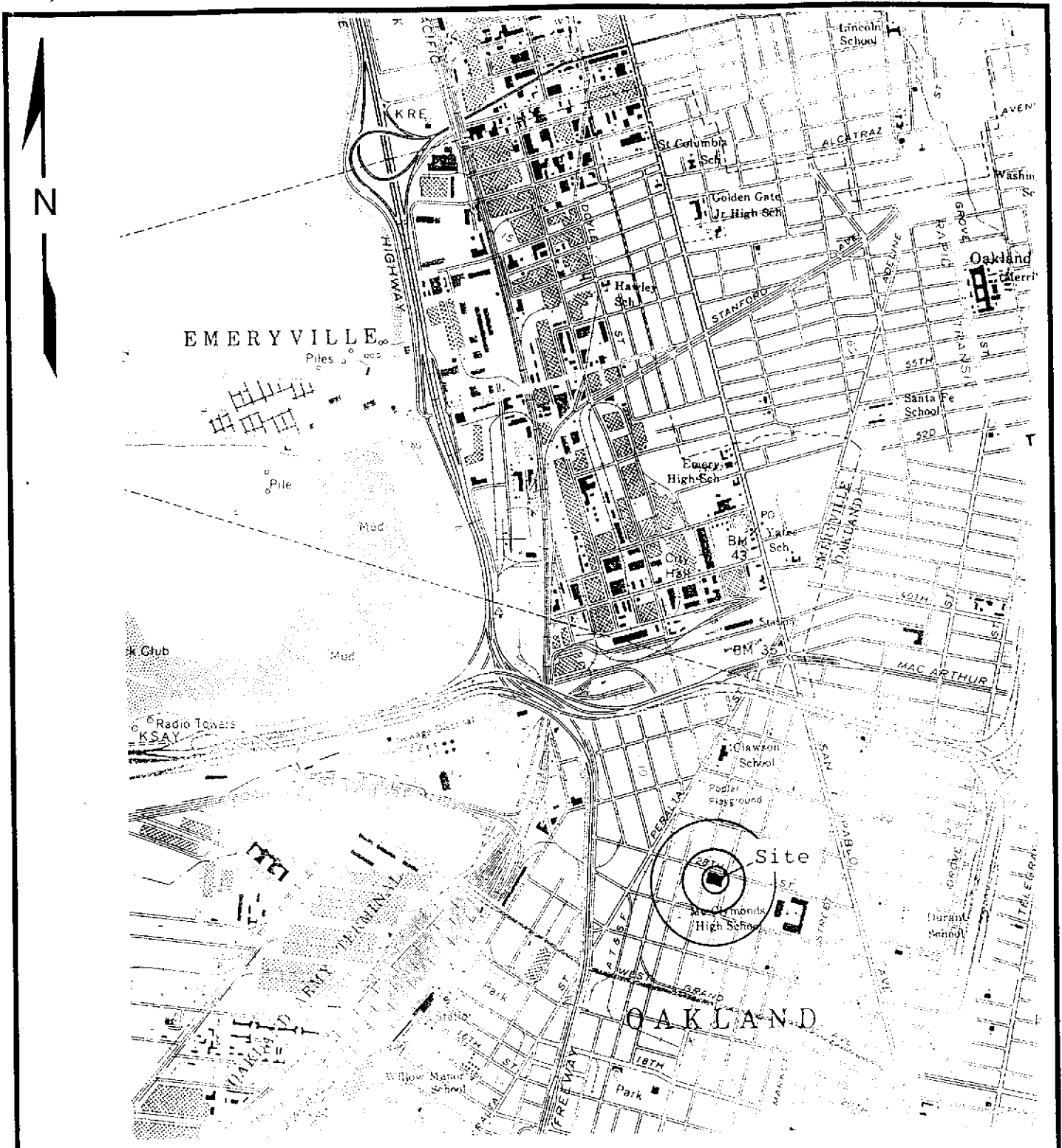
LEGEND

- Soil boring location
- ◆ Monitoring well location
- Monitoring well for 2730 Peralta Street

BORING AND MONITORING  
WELL LOCATION MAP

CUSTOM ALLOY SCRAP SALES  
2711 UNION STREET  
OAKLAND, CALIFORNIA

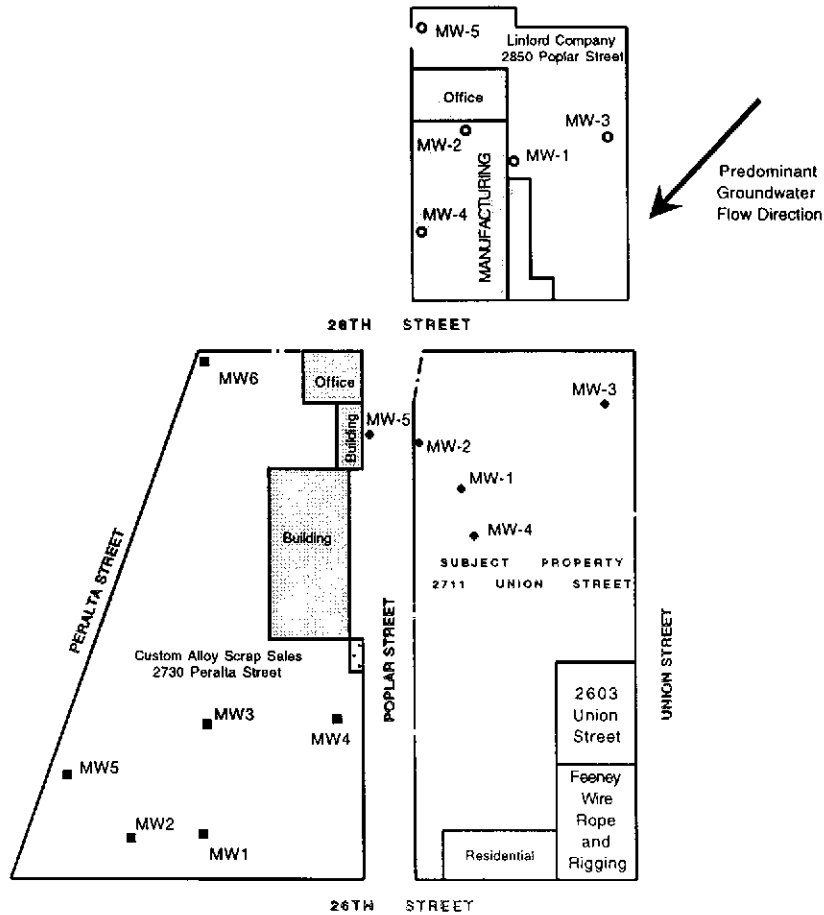
AQUA SCIENCE ENGINEERS, INC. FIGURE 2



**SITE LOCATION MAP**

Custom Alloy Scrap Sales  
 Poplar and 28th Street  
 Oakland, California

BASE: USGS Oakland West 7.5 minute quadrangle topographic map  
 dated 1980, scale 1:24,000.



NORTH  
 SCALE  
 1" = 200'

LEGEND	
•	Monitoring well for 2711 Union Street
○	Monitoring well for 2850 Poplar Street
■	Monitoring well for 2730 Peralta Street

MONITORING WELL LOCATION MAP	
CUSTOM ALLOY SCRAP SALES 2711 UNION STREET OAKLAND, CALIFORNIA	
AQUA SCIENCE ENGINEERS, INC.	FIGURE 3

**TABLE ONE**  
**Summary of Chemical Analysis of SOIL Samples**  
**All results are in parts per million**

<b>COMPOUND</b>	<b>BH-A 3.5'</b>	<b>BH-B 3.5'</b>	<b>BH-C 5.0'</b>	<b>BH-D 3.5'</b>	<b>BH-E 3.5'</b>	<b>BH-F 3.5'</b>	<b>BH-G 3.5'</b>	<b>BH-H 3.5'</b>	<b>BH-I 3.5'</b>	<b>BH-J 3.5'</b>	<b>PRG (Industrial)</b>
TPH-G	<b>7.6*</b>	<1	<1	<1	<b>1.6*</b>	<1	<1	<b>1.8</b>	<1	<1	NE
TPH-D	<b>1,700*</b>	<1	<1	<1	<b>2,100*</b>	<b>150*</b>	<b>69*</b>	<b>4,300*</b>	<b>42*</b>	<1	NE
Oil & Grease	<50	<50	<50	<50	<b>3,900</b>	<b>4,500</b>	<50	<b>2,300</b>	<50	<50	NE
Toluene	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.01</b>	<0.005	<0.005	<0.005	<0.005	2,800
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.0092</b>	<0.005	<0.005	690
Total xylenes	<b>0.016</b>	<0.01	<0.01	<0.01	<b>0.01</b>	<b>0.006</b>	<0.01	<b>0.011</b>	<0.01	<0.01	990
cis-1,2-DCE	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.055</b>	<0.005	<0.005	<0.005	<0.005	200
trans-1,2-DCE	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.018</b>	<0.005	<0.005	<0.005	<0.005	600
TCE	<0.005	<0.005	<0.005	<b>0.0093</b>	<0.005	<b>0.052</b>	<0.005	<0.005	<0.005	<0.005	17
Other VOCs	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	<0.005- <0.02	V
Cadmium	<b>0.34</b>	<b>0.30</b>	<b>0.34</b>	<b>0.25</b>	<b>1.1</b>	<b>0.29</b>	<b>0.27</b>	<b>0.65</b>	<b>0.34</b>	<b>0.31</b>	850
Chromium	<b>24</b>	<b>24</b>	<b>46</b>	<b>36</b>	<b>26</b>	<b>34</b>	<b>35</b>	<b>37</b>	<b>27</b>	<b>43</b>	450
Lead	<b>4.4</b>	<b>13</b>	<b>4.6</b>	<b>4.2</b>	<b>66</b>	<b>4.5</b>	<b>6.4</b>	<b>150</b>	<b>8.6</b>	<b>5.4</b>	1,000
Nickel	<b>20</b>	<b>21</b>	<b>24</b>	<b>19</b>	<b>23</b>	<b>21</b>	<b>15</b>	<b>24</b>	<b>21</b>	<b>22</b>	150
Zinc	<b>15</b>	<b>23</b>	<b>23</b>	<b>18</b>	<b>62</b>	<b>19</b>	<b>24</b>	<b>120</b>	<b>22</b>	<b>24</b>	100,000

**Abbreviations:**

- TPH-G = Total petroleum hydrocarbons as gasoline
- TPH-D = Total petroleum hydrocarbons as diesel
- DCE = Dichloroethene
- TCE = Trichloroethene
- VOCs = Volatile organic compounds by EPA Method 8010
- PRG = US EPA Region IX Preliminary Remediation Goal
- NE = Not established
- V = Varies; PRG depends on the compound

**Notes:**

- \* = Chromatogram pattern does not resemble standard.

Detectable concentrations in **bold**.

Non-detectable concentrations noted by the less than symbol (<) followed by the detection limit.



**TABLE TWO**  
**Summary of Chemical Analysis of SOIL Samples**  
**All results are in parts per million**

<b>COMPOUND</b>	<b>MW-1 6.0'</b>	<b>MW-2 6.0'</b>	<b>MW-3 6.0'</b>	<b>MW-4 6.0'</b>	<b>MW-5 6.5'</b>
Total petroleum hydrocarbons as Gasoline (TPH-G)	< 1.0	< 1.0	< 1.0	< 1.0	NA
Total petroleum hydrocarbons as Diesel (TPH-D)	< 1.0	<b>350**</b>	< 1.0	<b>280*</b>	NA
Benzene	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
Toluene	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
Ethylbenzene	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
Total xylenes	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
MTBE	< 0.0050	< 0.0050	< 0.0050	< 0.0050	NA
Fluorene	< 0.0050	< 0.025	< 0.0050	<b>0.048</b>	NA
Other SVOCs	< 0.005- < 0.015	< 0.025- < 0.075	< 0.005- < 0.015	< 0.025- < 0.075	NA
Vinyl Chloride	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
cis-1,2-Dichloroethene	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
trans-1,2- Dichloroethene	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Trichloroethene (TCE)	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Tetrachloroethene (PCE)	< 0.010	< 0.010	< 0.010	< 0.010	< 0.0050
Chlorobenzene	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Other VOCs	< 0.0050- < 0.010	< 0.0050- < 0.010	< 0.0050- < 0.010	< 0.0050- < 0.010	< 0.0050- < 0.050

Notes:

- \* = Chromatogram pattern does not resemble diesel standard.
- \*\* = Chromatogram pattern does not resemble diesel standard: hydrocarbons in motor oil range detected.
- NA = Not analyzed

Detectable concentrations in **bold**.

Non-detectable concentrations indicated by the less than sign (<) followed by the detection limit.

**TABLE THREE**  
**Summary of Chemical Analysis of GROUNDWATER Samples**  
**All results are in parts per billion**

<b>COMPOUND</b>	<b>BH-A</b>	<b>BH-B</b>	<b>BH-C</b>	<b>BH-E</b>	<b>BH-1</b>	<b>MCL</b>
TPH-G	<b>95*</b>	<50	<b>51*</b>	<50	<50	NE
TPH-D	<b>3,800*</b>	<b>7,100*</b>	<b>2,600*</b>	---	<b>2,000*</b>	NE
Oil & Grease	<5,000	<8,000	<5,000	---	<5,000	NE
Ethylbenzene	<0.5	<0.5	<0.5	<b>0.9</b>	<0.5	680
Total xylenes	1.3	<1	<1	<b>1.3</b>	<1	1,750
Vinyl Chloride	<b>8.3</b>	<b>2.4</b>	<b>10</b>	<b>43</b>	<1	0.5
1,1-DCE	<b>2.1</b>	<1	<1	<1	<1	6
1,1-DCA	<1	<b>22</b>	<b>1.5</b>	<1	<1	5
cis-1,2-DCE	<b>55</b>	<b>3.4</b>	<b>78</b>	<b>75</b>	<b>1.3</b>	6
trans-1,2-DCE	<b>15</b>	<1	<b>3.3</b>	<b>6.7</b>	<1	10
TCE	<b>34</b>	<1	<b>100</b>	<b>9.1</b>	<1	5
PCE	1	<1	1	<1	<1	5
Chlorobenzene	<b>21</b>	<1	<1	<1	<1	NE
1,2-Dichlorobenzene	39	<5	<5	<5	<5	130**
Other VOCs	<1-<20	<1-<20	<1-<20	<1-<20	<1-<20	V
Cadmium	<2	---	<2	---	<b>2.3</b>	10
Chromium	<10	---	<10	---	<10	50
Lead	<3	---	<3	---	<3	50
Nickel	<b>240</b>	---	<b>130</b>	---	<b>1,000</b>	NE
Zinc	<20	---	<20	---	<20	NE

Abbreviations:

- TPH-G = Total petroleum hydrocarbons as gasoline  
 TPH-D = Total petroleum hydrocarbons as diesel  
 1,1-DCE = Dichloroethene  
 1,1-DCA = Dichloroethane  
 TCE = Trichloroethene  
 PCE = Tetrachloroethene  
 VOCs = Volatile organic compounds by EPA Method 8010  
 MCL = California Department of Toxic Substances Control Maximum Contaminant Level for Drinking Water  
 --- = Not analyzed  
 NE = Not established  
 V = Varies; MCL depends on the compound

Notes:

- \* = Chromatogram pattern does not resemble standard  
 \*\* = Recommended action level

Detectable concentrations in **bold**.

Non-detectable concentrations noted by the less than symbol (<) followed by the detection limit.

**TABLE FOUR**  
**Summary of Chemical Analysis of WATER Samples**  
**TPH-G, TPH-D, BTEX and MTBE**  
**(All Results are in parts per billion)**

Sample I.D.	TPH-G	TPH-D	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
<u>MW-1</u>							
10/03/96	83	<50	<0.5	<0.5	<0.5	<0.5	<5
01/07/97	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
04/01/97	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
07/08/97	<500	<50	<5	<5	<5	<5	<50
06/15/98	<50	<50	0.68	2.8	<0.5	<0.5	<5
<u>MW-2</u>							
10/03/96	210	2,000*	1.1	<0.5	<0.5	<0.5	130
01/07/97	320	3,200*	2.0	0.86	<0.5	<0.5	<50
04/01/97	<50	850*	1.1	<0.5	<0.5	0.52	<5
07/08/97	<2,500	740*	<25	<25	<25	<25	<25
06/15/98	<50	<620	2.4	0.66	<0.5	<0.5	<5
<u>MW-3</u>							
10/03/96	200	53	<0.5	1.4	<0.5	<0.5	<5
01/07/97	<50	<50	<0.5	0.68	<0.5	<0.5	<5
04/01/97	<50	<50	<0.5	0.61	<0.5	<0.5	<5
07/08/97	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
06/15/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
<u>MW-4</u>							
10/03/96	120	1,400*	<0.5	3.8	<0.5	<0.5	<5
01/07/97	<50	2,100*	<0.5	0.91	<0.5	<0.5	<5
04/01/97	<50	750*	<0.5	<0.5	<0.5	<0.5	<5
07/08/97	<1,000	590*	<10	<10	<10	<10	<100
06/15/98	<50	690*	1.6	4.6	<0.5	<0.5	<5
<u>DTSC</u>							
MCLs	NE	NE	1	100*	680	1,750	NE
EPA METHOD	5030/ 8015M	3510/ 8015M	8020	8020	8020	8020	8020

Notes:

DTSC MCL = California Department of Toxic Substance Control maximum contaminant level for drinking water.

NE = DTSC MCLs and RALs not established

\* = Chromatogram pattern does not resemble diesel fuel; hydrocarbons in motor oil range detected.

\*\* = DTSC recommended action level (RAL); MCL not established

**TABLE FIVE**  
**Summary of Chemical Analysis of WATER Samples**  
**Volatile Organic Compounds (VOC's)**  
**EPA Method 8240 or 8010**  
**(All Results are in parts per billion)**

Sample I.D.	VC	1,1-DCE	trans-1,2-DCE	cis-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CB	1,3-DCB	1,4-DCB	1,2-DCB
<u>MW-1</u>												
10/03/96	<20	<20	<20	61	<20	<20	2,200	<20	<20	<20	<20	<20
01/07/97	2.0	0.70	2.7	73	<0.5	1.8	1,500	18	<0.5	<0.5	<0.5	<0.5
04/01/97	<10	<10	<10	71	<10	<10	1,500	18	<10	<10	<10	<10
07/08/97	<40	<40	<40	43	<40	<40	2,600	<40	<40	<40	<40	<40
06/15/98	<20	<20	<20	68	<20	<20	2,000	20	<20	<20	<20	<20
<u>MW-2</u>												
10/03/96	160	<20	47	200	<20	<20	220	<20	32	<20	<20	<20
01/07/97	95	4.5	42	290	4.7	<0.5	270	18	74	0.90	4.8	35
04/01/97	120	5.3	53	240	4.7	<0.5	200	16	97	1.4	7.4	64
07/08/97	170	<5.0	53	440	5.8	<5.0	440	26	75	<5.0	<5.0	33
06/15/98	48	<5.0	29	190	<5.0	<5.0	140	13	130	<5.0	<5.0	62
<u>MW-3</u>												
10/03/96	<20	<20	<20	<20	<20	<20	120	520	<20	<20	<20	<20
01/07/97	<20	<20	<20	<20	<20	<20	300	1,700	<20	<20	<20	<20
04/01/97	<20	<20	<20	<20	<20	<20	190	910	<20	<20	<20	<20
07/08/97	<20	<20	<20	<20	<20	<20	330	1,800	<20	<20	<20	<20
06/15/98	<20	<20	<20	26	<20	<20	700	4,400	<20	<20	<20	<20
<u>MW-4</u>												
10/03/96	<20	<20	<20	28	<20	<20	270	<20	<20	<20	<20	<20
01/07/97	1.7	<0.5	<0.5	58	<0.5	<0.5	18	<0.5	<0.5	<0.5	<0.5	<0.5
04/01/97	25	1.5	6.2	100	1.1	<0.5	18	<0.5	<0.5	<0.5	<0.5	<0.5
07/08/97	34	<2.0	7.2	160	<2.0	<2.0	24	<2.0	<2.0	<2.0	<2.0	<2.0
06/15/98	40	1.3	6.4	110	1.1	<0.5	14	<0.5	<0.5	<0.5	<0.5	<0.5
<u>MW-5</u>												
06/15/98	<20	43	<20	87	<20	160	3,700	<20	<20	<20	<20	<20
DTSC												
MCL	0.5	6	10	6	5	200	5	5	30	NE	5	NE

Notes:

NE = DTSC MCL not established

VC = vinyl chloride

1,1-DCE = 1,1-dichloroethene

trans 1,2-DCE = trans-1,2-dichloroethene

cis 1,2-DCE = cis-1,2-dichloroethene

1,1-DCA = 1,1-dichloroethane

1,1,1-TCA = 1,1,1-trichloroethane

TCE = trichloroethene

PCE = tetrachloroethene

CB = chlorobenzene

1,3-DCB = 1,3-dichlorobenzene

1,4-DCB = 1,4-dichlorobenzene

1,2-DCB = 1,2-dichlorobenzene

**TABLE SIX**  
**Summary of Groundwater Well Survey Data**

Well I.D.	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	10-03-96	15.00	9.52	5.48
	01-07-97		6.74	8.26
	04-01-97		8.73	6.27
	07-08-97		9.19	5.81
	06-15-98		8.00	7.00
MW-2	10-03-96	15.44	9.75	5.69
	01-07-97		6.90	8.54
	04-01-97		8.96	6.48
	07-08-97		9.35	6.09
	06-15-98		8.28	7.16
MW-3	10-03-96	14.92	7.75	7.17
	01-07-97		4.27	10.65
	04-01-97		6.65	8.27
	07-08-97		7.21	7.71
	06-15-98		5.93	8.99
MW-4	10-03-96	14.98	8.73	6.25
	01-07-97		5.28	9.70
	04-01-97		7.64	7.34
	07-08-97		8.33	6.65
	06-15-98		6.83	8.15
MW-5	06-15-98	13.74	6.80	6.94

**TABLE SEVEN**

Summary of Chemical Analysis of **WATER** Samples  
 Linford Property, 2850 Poplar Street, Oakland, California  
 Volatile Organic Compounds (VOC's)  
 EPA Method 8010

(All Results are in **parts per billion**)

Sample I.D.	VC	1,1-DCE	trans-1,2-DCE	cis-1,2-DCE	1,1-DCA	1,1,2-TCA	TCE	PCE	CB	1,3-DCB	1,4-DCB	1,2-DCB
<u>MW-3</u>												
08/24/98	<0.5	<0.5	<0.5	18	<0.5	5.6	1,100	<0.5	<0.5	<0.5	<0.5	<0.5
<u>MW-4</u>												
08/24/98	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	23	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:

NE = DTSC MCL not established

VC = vinyl chloride

1,1-DCE = 1,1-dichloroethene

trans 1,2-DCE = trans-1,2-dichloroethene

cis 1,2-DCE = cis-1,2-dichloroethene

1,1-DCA = 1,1-dichloroethane

1,1,1-TCA = 1,1,1-trichloroethane

TCE = trichloroethene

PCE = tetrachloroethene

CB = chlorobenzene

1,3-DCB = 1,3-dichlorobenzene

1,4-DCB = 1,4-dichlorobenzene

1,2-DCB = 1,2-dichlorobenzene

## **APPENDIX A**

August 2, 1998 Letter  
From The  
Alameda County Health Care Services Agency



ENVIRONMENTAL HEALTH SERVICES

1131 Harbor Bay Parkway, Suite 259  
Alameda, CA 94502-8877  
(510) 567-8700  
(510) 337-9335 (FAX)

StID 269

August 4, 1998

Mr. Robert Kitay  
Aqua Science Engineers  
2411 Old Crow Canyon Rd, Suite 4  
San Ramon, CA 94583

**RE: Groundwater Sampling at 2711 Union St, Oakland, CA, and at Adjacent Properties**

Dear Mr. Kitay:

I have completed review of Aqua Science's July 1998 "Report of Off-Site Soil and Groundwater Assessment and Groundwater Monitoring Results" prepared for the above referenced site. This report documents the installation of an off-site groundwater monitoring well, (MW-5), and the monitoring/sampling of the new and existing on-site monitoring wells. The off-site well contained up to 3,700ppb TCE, 160ppb 1,1,1-TCA, 87ppb cis-1,2-DCE, and 43ppb 1,1DCE in groundwater. These concentrations were higher than expected, suggesting that there may be yet another source of VOCs in the vicinity.

In order to verify your suspicion that VOCs may be coming from another source, possibly from upgradient of the subject site, groundwater should be collected from wells MW-3 and MW-4 at 2850 Poplar Street. In addition, to delineate the downgradient extent of the VOC plume, groundwater should be collected from wells MW-4 and MW-6 at 2730 Peralta Street. Groundwater should be analyzed for VOCs using Method 8240. Please contact me if you have problems gaining access to these monitoring wells.

Finally, the newly installed well, MW-5, should be sampled quarterly for one year. The remaining on-site wells should be sampled on a semi-annual basis.

If you have any questions, I can be reached at (510) 567-6762.

eva chu  
Hazardous Materials Specialist

C: Mr. Eugene Teasley, c/o Mr. Claude Ames, 3667 Shafter Ave, Oakland, CA 94610  
Ms. Christine Noma, 1111 Broadway, 24<sup>th</sup> Floor, Oakland, CA 94607  
Ms. Katy Meador, 740A 14<sup>th</sup> St, #250, San Francisco, CA 94114  
Mr. James Cherry, 1849 Bonanza Street, Walnut Creek, CA 94596



# **APPENDIX B**

Well Sampling Field Logs



## WELL SAMPLING FIELD LOG

Project Name and Address: Linford, 2850 Poplar Street, Oakland, CA  
 Job #: \_\_\_\_\_ Date of sampling: 8-24-98  
 Well Name: MW-3 Sampled by: RK  
 Total depth of well (feet): 22.25 Well diameter (inches): 2'  
 Depth to water before sampling (feet): 6.62  
 Thickness of floating product if any: None  
 Depth of well casing in water (feet): 15.63  
 Number of gallons per well casing volume (gallons): 2.6  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 10.4  
 Equipment used to purge the well: Dedicated polyethylene bailer  
 Time Evacuation Began: 9:18 Time Evacuation Finished: 9:55  
 Approximate volume of groundwater purged: 10.4 gallons  
 Did the well go dry?: NO After how many gallons: \_\_\_\_\_  
 Time samples were collected: 10:00  
 Depth to water at time of sampling: \_\_\_\_\_  
 Percent recovery at time of sampling: \_\_\_\_\_  
 Samples collected with: Dedicated polyethylene bailer  
 Sample color: silty brown Odor: None  
 Description of sediment in sample: moderate amount of fine brown silt

### CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>Initial</u>	<u>71.1</u>	<u>6.67</u>	<u>8300</u>
<u>2.6 gals</u>	<u>68.0</u>	<u>6.82</u>	<u>8020</u>
<u>5.2 gals</u>	<u>67.6</u>	<u>6.98</u>	<u>6910</u>
<u>7.8 gals</u>	<u>67.3</u>	<u>6.89</u>	<u>7310</u>
<u>10.4 gals</u>	_____	_____	_____

### SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-3</u>	<u>2</u>	<u>100 ml HDPE bottles</u>	<u>yes</u>	<u>yes</u>	<u>LAB 2000</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____



## WELL SAMPLING FIELD LOG

Project Name and Address: Linford, 2850 Poplar Street Oakland, CA  
 Job #: \_\_\_\_\_ Date of sampling: 8-24-98  
 Well Name: MW-4 Sampled by: RK  
 Total depth of well (feet): 19.82 Well diameter (inches): 2"  
 Depth to water before sampling (feet): 7.20  
 Thickness of floating product if any: None  
 Depth of well casing in water (feet): 12.62  
 Number of gallons per well casing volume (gallons): 2.1  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 8.2  
 Equipment used to purge the well: Dedicated polyethylene bailer  
 Time Evacuation Began: 10:34 Time Evacuation Finished: 11:15  
 Approximate volume of groundwater purged: 8.4 gals  
 Did the well go dry?: No After how many gallons: —  
 Time samples were collected: 11:30  
 Depth to water at time of sampling: \_\_\_\_\_  
 Percent recovery at time of sampling: \_\_\_\_\_  
 Samples collected with: Dedicated polyethylene bailer  
 Sample color: None Odor: None  
 Description of sediment in sample: None

### CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>Initial</u>	<u>67.4</u>	<u>68.6</u>	<u>2670</u>
<u>2.1 gals</u>	<u>65.2</u>	<u>66.8</u>	<u>1123</u>
<u>4.2 gals</u>	<u>64.4</u>	<u>66.0</u>	<u>1115</u>
<u>6.3 gals</u>	<u>64.0</u>	<u>65.7</u>	<u>1089</u>
<u>8.4 gals</u>	<u>64.0</u>	<u>65.8</u>	<u>1092</u>

### SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-4</u>	<u>3</u>	<u>40ml WSA vials</u>	<u>HCl</u>	<u>Yes</u>	<u>CEA 5910</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

## **APPENDIX C**

Analytical Report and Chain of Custody Form  
For Groundwater Samples

# CHROMALAB, INC.

Environmental Services (SDB)

September 1, 1998

Submission #: 9808353

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: LINFORD PROPERTY  
Received: August 24, 1998

Project#: 2971

re: One sample for Volatile Halogenated Organics analysis.  
Method: SW846 Method 8010A July 1992

Client Sample ID: MW-3

Spl#: 202574

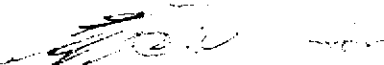
Matrix: WATER

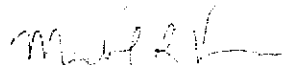
Sampled: August 24, 1998

Run#: 14585

Analyzed: August 28, 1998

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
VINYL CHLORIDE	N.D.	2.5	N.D.	--	5
CHLOROETHANE	N.D.	2.5	N.D.	--	5
TRICHLOROFLUOROMETHANE	N.D.	2.5	N.D.	--	5
1,1-DICHLOROETHENE	N.D.	2.5	N.D.	108	5
METHYLENE CHLORIDE	N.D.	25	N.D.	--	5
TRANS-1,2-DICHLOROETHENE	N.D.	2.5	N.D.	--	5
CIS-1,2-DICHLOROETHENE	18	2.5	N.D.	--	5
1,1-DICHLOROETHANE	N.D.	2.5	N.D.	--	5
CHLOROFORM	N.D.	15	N.D.	--	5
1,1,1-TRICHLOROETHANE	N.D.	2.5	N.D.	--	5
CARBON TETRACHLORIDE	N.D.	2.5	N.D.	--	5
1,2-DICHLOROETHANE	N.D.	2.5	N.D.	--	5
TRICHLOROETHENE	1100	2.5	N.D.	99.5	5
1,2-DICHLOROPROPANE	N.D.	2.5	N.D.	--	5
BROMODICHLOROMETHANE	N.D.	2.5	N.D.	--	5
2-CHLOROETHYL VINYL ETHER	N.D.	2.5	N.D.	--	5
TRANS-1,3-DICHLOROPROPENE	N.D.	2.5	N.D.	--	5
CIS-1,3-DICHLOROPROPENE	N.D.	2.5	N.D.	--	5
1,1,2-TRICHLOROETHANE	5.6	2.5	N.D.	--	5
TETRACHLOROETHENE	N.D.	2.5	N.D.	--	5
DIBROMOCHLOROMETHANE	N.D.	2.5	N.D.	--	5
CHLOROBENZENE	N.D.	2.5	N.D.	101	5
BROMOFORM	N.D.	10	N.D.	--	5
1,1,2,2-TETRACHLOROETHANE	N.D.	2.5	N.D.	--	5
1,3-DICHLOROBENZENE	N.D.	2.5	N.D.	--	5
1,4-DICHLOROBENZENE	N.D.	2.5	N.D.	--	5
1,2-DICHLOROBENZENE	N.D.	2.5	N.D.	--	5
TRICHLOROTRIFLUOROETHANE	N.D.	10	N.D.	--	5
CHLOROMETHANE	N.D.	5.0	N.D.	--	5
BROMOMETHANE	N.D.	5.0	N.D.	--	5
DICHLORODIFLUOROMETHANE	N.D.	5.0	N.D.	--	5

  
Oleg Nemtsov  
Analyst

  
Michael Verona  
Operations Manager

# CHROMALAB, INC.

Environmental Services (SDB)

September 1, 1998

Submission #: 9808353

AQUA SCIENCE ENGINEERS INC

Atten: Robert Kitay

Project: LINFORD PROPERTY  
Received: August 24, 1998

Project#: 2971

re: One sample for Volatile Halogenated Organics analysis.  
Method: SW846 Method 8010A July 1992

Client Sample ID: MW-4

Spl#: 202575


Matrix: WATER

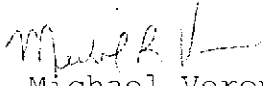
Sampled: August 24, 1998

Run#: 14585

Analyzed: August 28, 1998

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
VINYL CHLORIDE	N.D.	0.50	N.D.	--	1
CHLOROETHANE	N.D.	0.50	N.D.	--	1
TRICHLOROFLUOROMETHANE	N.D.	0.50	N.D.	--	1
1,1-DICHLOROETHENE	N.D.	0.50	N.D.	108	1
METHYLENE CHLORIDE	N.D.	5.0	N.D.	--	1
TRANS-1,2-DICHLOROETHENE	N.D.	0.50	N.D.	--	1
CIS-1,2-DICHLOROETHENE	N.D.	0.50	N.D.	--	1
1,1-DICHLOROETHANE	N.D.	0.50	N.D.	--	1
CHLOROFORM	N.D.	3.0	N.D.	--	1
1,1,1-TRICHLOROETHANE	N.D.	0.50	N.D.	--	1
CARBON TETRACHLORIDE	N.D.	0.50	N.D.	--	1
1,2-DICHLOROETHANE	N.D.	0.50	N.D.	--	1
TRICHLOROETHENE	23	0.50	N.D.	99.5	1
1,2-DICHLOROPROPANE	N.D.	0.50	N.D.	--	1
BROMODICHLOROMETHANE	N.D.	0.50	N.D.	--	1
2-CHLOROETHYL VINYL ETHER	N.D.	0.50	N.D.	--	1
TRANS-1,3-DICHLOROPROPENE	N.D.	0.50	N.D.	--	1
CIS-1,3-DICHLOROPROPENE	N.D.	0.50	N.D.	--	1
1,1,2-TRICHLOROETHANE	N.D.	0.50	N.D.	--	1
TETRACHLOROETHENE	N.D.	0.50	N.D.	--	1
DIBROMOCHLOROMETHANE	N.D.	0.50	N.D.	--	1
CHLOROBENZENE	N.D.	0.50	N.D.	101	1
BROMOFORM	N.D.	2.0	N.D.	--	1
1,1,2,2-TETRACHLOROETHANE	N.D.	0.50	N.D.	--	1
1,3-DICHLOROBENZENE	N.D.	0.50	N.D.	--	1
1,4-DICHLOROBENZENE	N.D.	0.50	N.D.	--	1
1,2-DICHLOROBENZENE	N.D.	0.50	N.D.	--	1
TRICHLOROTRIFLUOROETHANE	N.D.	2.0	N.D.	--	1
CHLOROMETHANE	N.D.	1.0	N.D.	--	1
BROMOMETHANE	N.D.	1.0	N.D.	--	1
DICHLORODIFLUOROMETHANE	N.D.	1.0	N.D.	--	1

  
Oleg Nemtsov  
Analyst

  
Michael Verona  
Operations Manager

06/17 2001 - 2001

Aqua Science Engineers, Inc.  
 2411 Old Crow Canyon Road, #4,  
 San Ramon, CA 94583  
 (925) 820-9391  
 FAX (925) 837-4853

# Chain of Custody

41598

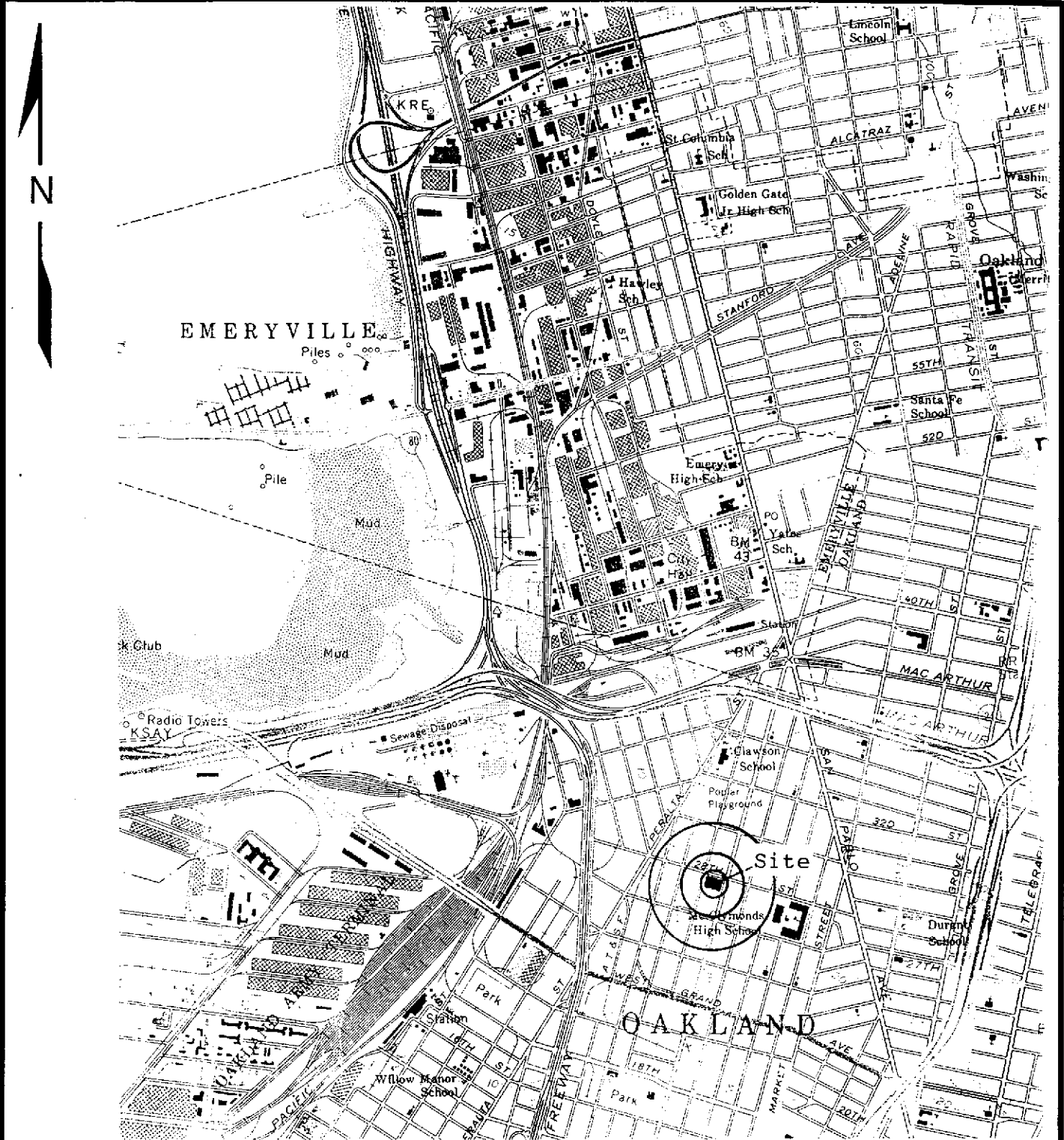
PAGE 1 OF 1

SAMPLER (SIGNATURE) R. E. Kitz (PHONE NO.) (925) 820-9391 PROJECT NAME Linford Property JOB NO. 2971  
 ADDRESS 2850 Poplar Street, Oakland, CA DATE 8-24-98

## ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:					TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-GASOLINE (EPA 5030/8015)	TPH-DIESEL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	PURGEABLE AROMATICS (EPA 602/8020)	VOLATILE ORGANICS (EPA 624/8240)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608)	ORGANO PESTICIDE	ORGANO HERBICIDE	FUEL OX (EPA 826)	COMPO
SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES															
MCS-3	8/24	10:00	Water	3				X											
MCS-4	↓	11:30	↓	3				X											

RELINQUISHED BY: <u>R. E. Kitz</u> 17:15 (signature) (time)	RECEIVED BY: <u>[Signature]</u> 17:15 (signature) (time)	RELINQUISHED BY: <u>[Signature]</u> 18:06 (signature) (time)	RECEIVED BY LABORATORY: <u>[Signature]</u> (signature) (time)	COMMENTS: <u>5-DAG</u> <u>TAT</u>
Robert E. Kitz 8-24-98 (printed name) (date)	[Signature] 8-24-98 (printed name) (date)	B. Morrow 8-24-98 (printed name) (date)	Classidy 10:00 (signature) (time)	
Company- ASE	Company- [Signature]	Company- [Signature]	Company- [Signature] 8/24/98	



**SITE LOCATION MAP**

Custom Alloy Scrap Sales  
 Poplar and 28th Street  
 Oakland, California

Aqua Science Engineers, Inc. Figure 1

BASE: USGS Oakland West 7.5 minute quadrangle topographic map,  
 dated 1980, scale 1:24,000.



# CHROMALAB, INC.

Environmental Service (SDB)

## Sample Receipt Checklist

Client Name: AQUA SCIENCE ENGINEERS INC Date/Time Received: 08/24/98 | 1715  
Reference/Submis: 41598 | 9808353 Received by: BM  
Checklist completed by: Chris Rowley 8/25/98 Reviewed by: AP 8/25/98  
Signature Date Initials Date  
Matrix: H2O Carrier name: Client - C/L

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Temp: 3.3°C Yes  No
- Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No
- Water - pH acceptable upon receipt?  Adjusted?  Checked by Chemist for VOAs
- Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted: \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action: \_\_\_\_\_