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By Alameda County Environmental Health 12:02 pm, May 16, 201

May 15, 2017

Alameda County Environmental Health Services  
Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577  
Attn: Anne Jurek

**RE: Groundwater Monitoring Results, First Semi-Annual 2017 Monitoring Period,  
Cargill Salt – Alameda Facility, Alameda, California,  
SLIC Case No. RO0002480**

Dear Ms. Jurek,

The attached report presents the groundwater monitoring results for the first semi-annual 2017 monitoring period for the Cargill Salt Alameda facility. The report presents the results of groundwater monitoring data collected during February 2017. Groundwater levels in the site monitoring wells were measured, groundwater samples were collected and analyzed, and the groundwater flow direction and gradient were determined.

The tetrachloroethene (PCE) concentrations reported for monitoring wells at the site continue to indicate that the phytoremediation project implemented in June 2005 has significantly reduced the average seasonal concentration of PCE at the site.

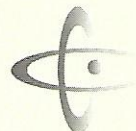
I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report are true and correct to the best of my knowledge.

Should you have any questions concerning the report, please don't hesitate to call me at (510) 790-8625.

Sincerely,

Sean Riley  
Environmental Manager

**Groundwater Monitoring Results**  
**First Semi-Annual 2017 Monitoring Period**  
**Cargill Salt – Alameda Facility**  
**Alameda, California**



CRAWFORD  
CONSULTING  
INC.

**Groundwater Monitoring Results  
First Semi-Annual 2017 Monitoring Period  
Cargill Salt – Alameda Facility  
Alameda, California**

**Prepared for:  
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**Project No. CS1605  
May 15, 2017**

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# 1 Introduction

Crawford Consulting, Inc. (Crawford) has prepared this report on behalf of Cargill Salt for the Cargill Salt Dispensing Systems Division facility (hereafter, the Site) in Alameda, California.

Results of groundwater transect sampling and the initial sampling of three groundwater monitoring wells installed in November 1999 were presented in the January 31, 2000 report, *Groundwater Characterization and Monitoring Well Installation, Cargill Salt – Alameda Facility, Alameda, California* (Crawford Consulting, Inc. and Conor Pacific/EFW). The purpose of the groundwater transect sampling and the monitoring well installation and sampling was to help characterize and monitor the occurrence of volatile organic compounds (VOCs), primarily tetrachloroethene (PCE) and its breakdown product, trichloroethene (TCE), previously detected in groundwater at the Site.

One of the recommendations in the report was to confirm the groundwater analytical results of the newly installed monitoring wells (wells MW-1, MW-2, and MW-3) and the groundwater flow direction and gradient via quarterly monitoring. Cargill Salt began groundwater monitoring on a quarterly basis after the initial groundwater monitoring well sampling event in November 1999. For 2000 through 2005, reporting was performed on an annual basis. Cargill Salt began reporting on a semi-annual basis in 2006.

Cargill Salt conducted additional characterization activities in November and December 2001 to evaluate the off-site extent of VOCs in the soil and groundwater. Soil and groundwater samples were collected and analyzed from a neighboring residential property and along Clement Avenue, slug tests were performed in the three existing monitoring wells, and a groundwater monitoring well (MW-4) was installed in Clement Avenue.

A phytoremediation project was implemented at the Site in June 2005. Based on reductions in PCE concentrations in groundwater since 2006, Alameda County Environmental Health suggested in a September 30, 2009 letter that Cargill Salt reduce the groundwater monitoring frequency from quarterly to semi-annually. The second half of 2009 was the first semi-annual monitoring period under the reduced monitoring frequency. Groundwater sampling and analysis are now performed during the first and third quarters.

## 1.1 Reporting Period Activities

This report presents the results of groundwater monitoring data collected for the first semi-annual 2017 monitoring event. Groundwater levels in the site monitoring wells were measured, groundwater samples were collected and analyzed, and the groundwater flow direction and gradient were determined.

The monitoring event for the first semi-annual 2017 monitoring period was conducted on February 3, 2017. Supervision of the monitoring event was conducted for Cargill Salt by Crawford. Groundwater level measurements and collection of groundwater samples were conducted by Field Solutions, Inc. The groundwater samples were analyzed by TestAmerica Laboratories, Inc., a state-certified laboratory in Pleasanton, California.

## 1.2 Background Information

A description of the Site and a summary of the development of characterization and monitoring programs for the Site are presented in this section. The information presented in this section is for historical reference and does not include reporting of monitoring data for the monitoring period of this semi-annual report.

### 1.2.1 Site Description

Alameda is an island on the east side of San Francisco Bay, separated from Oakland by a tidal canal (Figure 1). The Cargill Salt Dispensing Systems Division facility is located on a rectangular lot in an industrial and residential neighborhood. The facility building occupies approximately one-third of the Site and is separated from the vacant, unpaved side of the lot by an asphalt driveway (Figure 2). The Site is bordered by a sheet-metal shop and a residential lot to the northwest, an apartment complex to the southwest, and a residential lot to the southeast.

From 1951 to 1978, the Alameda facility produced salt-dispensing units, which required casting and milling aluminum parts.

Constituents of concern associated with site operations have included casting sands with elevated concentrations of metals, and solvents, machine oils, and grease used in casting and milling operations. As discussed below, previous investigations and remedial activities have investigated and remediated metals and solvents (VOCs) in vadose-zone soil.

### 1.2.2 Summary of Investigative and Remedial Activities

Cargill Salt initiated site investigative activities in 1993 to determine if facility operations had impacted site soils. Cargill Salt submitted the results of the soil sampling investigation to the Alameda County Environmental Health Services (ACEHS) in October 1993 along with a workplan for excavation and disposal of impacted soils and assessment of potential impact to groundwater (Groundworks Environmental, Inc. [Groundworks], 1993).

After approval of the workplan by ACEHS, Cargill Salt conducted several phases of soil remediation and groundwater characterization. Surficial soils impacted by metals were excavated for disposal off site. Vadose-zone soils with the highest degree of impact by VOCs were also excavated for off-site disposal (see “Soil excavation area” on Figure 2).

The results of these activities were submitted to the ACEHS in a report, *Soil and Groundwater Investigations and Remedial Activities, July 1993 – September 1994, Cargill Salt – Alameda Facility, Alameda, California* (Groundworks, 1995). Recommendations for additional work to further delineate the lateral and vertical extent of VOCs in groundwater beneath the Site were presented in the report.

A workplan for the additional delineation of VOCs in groundwater, *Workplan for Groundwater Characterization and Monitoring Well Installation, 2016 Clement Avenue, Alameda, California* (CCI), was submitted to the ACEHS in July 1999.

After approval of the workplan by the ACEHS, Cargill Salt conducted groundwater sampling and well installation activities during August and November of 1999. The results of these activities were submitted to the ACEHS in a report, *Groundwater Characterization and Monitoring Well Installation, Cargill Salt – Alameda Facility, Alameda, California* (Crawford Consulting, Inc. and

Conor Pacific/EFW, dated January 31, 2000). After the initial groundwater monitoring well sampling event in November 1999, Cargill Salt began groundwater monitoring on a quarterly basis.

A work plan for remedial investigation activities, *Workplan for Off-Site Characterization, Cargill Salt – Alameda Facility, Alameda, California* (Conor Pacific/EFW), was submitted to the ACEHS in June 2001. After approval of the workplan by the ACEHS, Cargill Salt conducted characterization activities in November and December 2001 to evaluate off-site extent of VOCs in the soil and groundwater. Soil and groundwater samples were collected and analyzed from a neighboring residential property and along Clement Avenue, slug tests were performed in the three existing monitoring wells, and a groundwater monitoring well (MW-4) was installed in Clement Avenue. The results of these activities were submitted to the ACEHS in the August 21, 2002 submittal *Off-Site Groundwater Characterization, Cargill Salt – Alameda Facility, Alameda, California*, prepared by Conor Pacific/EFW.

A phytoremediation project was implemented at the Site in June 2005. The project involved planting 96 bare-root hybrid poplar trees in a grid of 24 rows. The rows are generally 6 feet apart with trees on 7-foot centers on each row. Selection of the phytoremediation approach and implementation of the project were described in the October 20, 2006 report, *Groundwater Monitoring Results, First through Fourth Quarter 2005, Cargill Salt – Alameda Facility, Alameda, California* prepared by Crawford Consulting, Inc. In April 2008, seven additional saplings were planted in the rear of the property near monitoring well MW-2.

The Site groundwater monitoring wells were re-surveyed in September 2006 by CSS Environmental Services in order to provide Geotracker-compliant survey data. Results of the casing elevation survey indicate that each well is approximately 6.4 feet higher than the previous survey conducted in 1999. This difference is due to the use of different datum for the 2006 and 1999 surveys. The casing elevations from the September 2006 survey are shown on Table 1.

### **1.2.3 Source of VOC Impact**

As discussed in the 1995 report, the occurrence of VOCs in soils and groundwater at the Site appears to be the result of a discharge or spill to surficial soils at a location near the rear property line at the southwestern corner of the property. The area with the highest degree of chemical impact was delineated prior to excavation and was then excavated using a backhoe and transported off-site for appropriate disposal. It is possible that the VOCs detected in soils and groundwater at this location were associated with waste products from facility operations. The VOCs may be associated with solvents previously used for degreasing operations at the facility, although there are no records indicating use of PCE. Site records indicate that the solvents used for degreasing operations were not PCE-based solvents.

It is also possible that the VOCs and oil and grease are associated with waste products discarded from neighboring properties. There is an apartment complex next to the rear property line of the facility, and the laundry room for this complex is in the utility shed immediately adjacent to the rear property line. This laundry room is only 4 feet away from the area of highest impact to soil. If PCE associated with laundry cleaning products were spilled in this laundry room, it is possible that it could have drained onto the Cargill Salt property.



## 2 Groundwater Flow Analysis

Groundwater levels were measured and a groundwater contour map was prepared for the first semi-annual 2017 monitoring event.

### 2.1 Water-Level Measurement

Water levels in four of the groundwater monitoring wells (MW-1, MW-2, MW-3 and MW-4) were measured on February 3, 2017, before any of the groundwater monitoring wells were purged for sampling for the semi-annual monitoring event. The groundwater monitoring well locations are shown on Figure 2. The water levels were measured with an electric sounder. The depth to water at each well was recorded on a *Water Level Field Data* sheet (see Appendix A).

The water-level data through the first quarter of 2017 are shown on Table 1. The data in Table 1 include the date and time of measurement, the well casing elevation, the measured depth to groundwater, the groundwater elevation, and the change in elevation from the previous measurement. A plot of historical groundwater elevations is shown in Figure 3.

As reviewed in the last semi-annual monitoring report, groundwater levels in the on-site monitoring wells (MW-1, MW-2, and MW-3) and off-site well (MW-4) showed a different pattern in the first and third quarters of 2011 than the general seasonal pattern for the previous nine years (see Figure 3).

Groundwater levels in all four wells generally exhibit similar seasonal fluctuations, and the first quarter groundwater elevations have typically exhibited effects of winter-season recharge. However, the groundwater elevations recorded in March 2011 for the three most downgradient wells showed a decline rather than the typical seasonal rise. The levels measured for those three wells in March 2011 were the lowest recorded to date. That trend continued in 2011, with the September 2011 groundwater elevations recorded for all four wells being the lowest recorded to date for each of the wells.

An overall downward trend had continued from 2011 through the third quarter 2014 measurement event. Seasonal recharge was still apparent but the average groundwater elevation had been declining. The change in the groundwater elevations noted since March 2011 may be related to nearby East Bay Municipal Utility District (EBMUD) sewer pipeline repair and replacement operations as well as to dewatering operations that were conducted at a nearby facility demolition project.

In the last semi-annual monitoring report, it was noted that the overall downward trend observed through the third quarter 2014 measurement event appeared to have ceased but the average seasonal groundwater elevations recorded through 2016 remained below those recorded through 2010.

The water levels recorded for the first semi-annual 2017 monitoring period (in February 2017) were higher than previously recorded for three of the wells (MW-2, MW-2 and MW-4) at the site, and at the highest level previously recorded for one of the wells (MW-1). The groundwater elevations were 2.6 to 5.4 feet higher than the elevations measured for the second semi-annual 2016 monitoring period (in September 2016), reflecting recharge from the above-average winter season rainfall. These increases in groundwater elevation are shown on Figure 3.

## 2.2 Groundwater Flow Direction and Gradient

A groundwater contour map based on the February 2017 water-level data is shown on Figure 4.

The groundwater flow pattern determined for the February 2017 measurement event was generally similar to patterns previously determined for the site. The flow direction determined for the site area was to the northeast. The horizontal hydraulic gradient measured for the site for the February 2017 measurement event was 0.016, similar to gradients previously determined.

## 2.3 Groundwater Velocity

Average linear groundwater flow velocities (V) were calculated using a form of Darcy's Law,

$$V = Ki/n,$$

where “K” is the hydraulic conductivity, “i” is the horizontal hydraulic gradient, and “n” is the effective porosity. The groundwater velocity calculations for the first quarter of 2017 groundwater data are presented in Appendix B.

Using hydraulic conductivity and porosity values determined for saturated native materials at the Site [based on slug tests and laboratory soil testing, respectively (Conor Pacific/EFW, 2002)], and the horizontal hydraulic gradients determined from the first quarter 2017 groundwater contour map, the groundwater flow velocity beneath the Site is calculated to be approximately 1 foot per year (ft/yr) for the first quarter 2017 measurements. The groundwater velocities measured for the Site have historically been in the range of 0.1 to 2 ft/yr.

## **3 Groundwater Sampling and Analysis**

This section summarizes the sample collection and analytical methods, presents an evaluation of quality control data, and summarizes the results of the sampling events.

### **3.1 Sample Collection and Analysis**

Groundwater samples were collected February 3, 2017 from groundwater monitoring wells MW-1, MW-2, MW-3, and MW-4.

Dedicated tubing was installed in wells MW-1, MW-2, and MW-3 prior to the first quarter 2000 sampling event and on December 17, 2001 in well MW-4 to facilitate sampling with a peristaltic pump. Dedicated fluorinated ethylene propylene resin (FEP)-lined polyethylene tubing was installed in each monitoring well. The tubing intake was placed about one foot above the well bottom in each of the wells. Viton<sup>®</sup> dedicated check valves were installed on the tubing intakes to prevent back-flow of water into the well. A short length of dedicated Viton<sup>®</sup> tubing was installed at the well head for use in a peristaltic pump head. Prior to sample collection for each quarterly monitoring event, the wells were purged using a peristaltic pump. Field parameters (pH, electrical conductivity, temperature, and turbidity) were measured in purged groundwater from each well prior to sampling; these data are recorded on the Sample Collection Field Data sheets presented in Appendix A. After purging, groundwater samples were collected using the peristaltic pump and the dedicated Viton<sup>®</sup> pump head discharge tubing.

The groundwater samples were analyzed for VOCs using U.S. Environmental Protection Agency (USEPA) Method 8260. Results for all Method 8010 analytes were reported. The groundwater samples for the first semi-annual 2017 event were delivered with appropriate chain-of-custody documentation to TestAmerica Laboratories, Inc., a state-certified laboratory in Pleasanton, California, for chemical analysis.

### **3.2 Analytical Results**

The results of field and laboratory quality control measures and the results of the groundwater monitoring well samples are reviewed in this section. The certified analytical reports and chain-of-custody documentation are presented in Appendix C.

#### **3.2.1 Quality Control**

Quality control (QC) samples were analyzed as part of the sampling and analysis program to evaluate the precision and accuracy of the reported groundwater chemistry data. QC samples included both field and laboratory samples. Descriptions of the purpose of specific field and laboratory QC samples used during the sampling and analysis program and an evaluation of field and laboratory QC results are presented below.

### Field Quality Control Samples

A field duplicate was used during the first semi-annual 2017 sampling event for the Site. A field duplicate is used to assess sampling and analytical precision. The duplicate is collected at a selected well (MW-2) and then submitted "blind" to the laboratory for analysis with the same batch as the regular sample for the selected well. An estimate of precision is obtained by calculating the relative percent difference (RPD) between the regular sample and the duplicate sample using the following formula:

$$\text{RPD} = \frac{[x - y] 100}{0.5 (x + y)}$$

where:  $[x - y]$  = the absolute value of the difference in concentration between the regular sample (x) and the duplicate sample (y).

### Laboratory Quality Control Samples

The following types of laboratory QC samples were used during the first semi-annual 2017 analytical program for the Site:

- surrogate spikes
- matrix spikes/duplicate matrix spikes

A surrogate spike is a check standard added to a sample in a known amount prior to analysis. Surrogate spikes consist of analytes not normally found in environmental samples and not targeted by the analytical procedure. Surrogate spikes provide information on recovery efficiency by comparing the percent recovery of specific surrogate analyses to statistically derived acceptance limits developed by the USEPA or the laboratory (provided such laboratory-specific limits are stricter than those developed by the USEPA). If the recoveries fall within the acceptance limits for the analytes, the analysis exhibits acceptable recovery efficiency. Recoveries that fall outside the acceptance limits indicate a potential problem with the recovery efficiency of analytes, which in turn indicates a potential bias with respect to the reported concentration of the environmental samples analyzed in the same batch.

Matrix spikes and duplicate matrix spikes are analyzed by the laboratory for the purpose of providing a quantitative measure of accuracy and precision, and to document the effect that the sample matrix has on the analysis. A selected sample is spiked in duplicate with known concentrations of analytes. The recoveries of the spiked analytes are compared to statistically derived acceptance limits developed by the USEPA or the laboratory (provided such laboratory-specific limits are stricter than those developed by the USEPA). If the recoveries fall within the acceptance limits for the analytes, the analysis has no statistically significant bias (i.e., the analysis is accurate). Recoveries that fall outside of the acceptance limits have a positive or negative bias, depending on whether the recovery is greater or less than the upper or lower acceptance limit, respectively. Analyses where analyte recoveries fall outside the acceptance limits should be regarded as estimates only.

Precision for matrix spikes is measured by calculating the relative percent differences (RPDs) between the measured concentration of analytes in the matrix and the duplicate matrix spike. The following equation is used for matrix spikes:

$$\text{RPD} = \frac{[ \text{MS} - \text{MSD} ] 100}{0.5 (\text{MS} + \text{MSD})}$$

where: [ MS - MSD ] = the absolute value of the difference in concentration between the matrix spike (MS) and the matrix spike duplicate (MSD)

### First Quarter 2017 Field QC Results

One field duplicate (DUP-1) was analyzed as part of the first quarter 2017 sampling event at the Site. The duplicate sample was collected at groundwater monitoring well MW-2 and was analyzed for halogenated VOCs using USEPA Method 8260B (8010 list). Table 2 summarizes the calculated RPDs for MW-2 and MW-2 duplicate (DUP-1). The three parameters [cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE), and tetrachloroethene (PCE)] for which the RPDs could be calculated (see Table 2), exhibited high RPD values (greater than 10%) indicative of poor precision.

### First Semi-Annual 2017 Laboratory QC Results

A review of the first semi-annual 2017 field data sheets and laboratory reports (presented in Appendices A and C, respectively) indicates that all analyses were performed within USEPA or California Department of Health Services (DHS) recommended maximum sample holding times.

QC data on surrogate spike recoveries and matrix spike recoveries are presented in the laboratory reports. These data indicate: (1) no surrogate spike recoveries were outside of the laboratory's acceptance limits; (2) RPD values for the matrix spikes and duplicate matrix spikes indicate a high overall degree of analytical precision.

No matrix spike or duplicate matrix spike recoveries were outside of the laboratory's control limits.

The laboratory QC data indicate that the results reported herein are of adequate quality for evaluation of site groundwater conditions.

### **3.2.2 Groundwater Results**

The results for the first semi-annual 2017 monitoring event are shown on Table 3a and Figure 5. The results of historical VOC analyses for 2000 through February 2017 are summarized in Table 3b, which also shows the VOC results for the initial sampling event for monitoring wells MW-1, MW-2, and MW-3 in November 1999. Historical PCE results for all four wells are plotted on Figure 6.

Consistent with previous monitoring events, PCE and its breakdown products TCE and cis-1,2-DCE were detected in Site groundwater samples from the first semi-annual 2017 monitoring event.

For the first semi-annual 2017 event, the concentrations of PCE detected were:

- 5.4 micrograms per liter (µg/L) in monitoring well MW-1
- 600 µg/L in MW-2
- not detected in MW-3 and MW-4

Other VOCs detected included the following:

- TCE was detected at 18 µg/L in monitoring well MW-1 and 31 µg/L in MW-2, but was not detected in MW-3 or MW-4.
- Cis-1,2-DCE was detected at 8.0 µg/L in monitoring well in MW-1 and 47 µg/L in MW-2, but was not detected in MW-3 or MW-4.

### 3.3 Discussion

Variations in VOC concentrations at monitoring well MW-2, the well with historically the highest reported PCE concentrations at the site, generally correlate with variations in groundwater elevations at the Site. An increase in VOC concentrations generally follows a rise in groundwater elevations, and a decrease in VOC concentration generally follows a fall in groundwater levels (see Figure 7). The variations in VOC concentrations sometimes lag one quarter behind the variations in groundwater elevation.

The results for VOC concentrations reported for the first semi-annual 2017 quarterly monitoring event are generally similar to the results reported since the second quarter of 2006 (see Figure 6), with the following exception:

- For the first time since March 2010, no VOCs were detected for the sample from well MW-3.

As described in previous monitoring reports, the average seasonal concentration of PCE reported for groundwater monitoring well MW-2 has been lower since the second quarter of 2006 (June 2006 event) compared to results reported since monitoring began in 1999 (see Figure 6). The PCE concentrations reported for MW-2 since June 2006 are an indication that the phytoremediation project implemented in June 2005 has significantly reduced the average seasonal concentration of PCE at the site.

## 4 Phytoremediation Project Status

A phytoremediation project was implemented at the Site in June 2005. The project involved planting 96 bare-root hybrid poplar trees in a grid on the unpaved portion of the site. Selection of the phytoremediation approach and implementation of the project were described in the report, *Groundwater Monitoring Results, First through Fourth Quarter 2005, Cargill Salt – Alameda Facility, Alameda, California* (Crawford Consulting, Inc., October 20, 2006).

The trees were 4-ft-tall, bare-root poles with no foliage when planted in June 2005. During the first two years of growth, the trees developed foliage and most grew 3 to 10 additional feet in height. Photos comparing the appearance of the trees just after planting in 2005 with photos taken in subsequent years are show below and on the following pages. After three years, most of the trees had grown to heights of 10 to 25 feet. After five years, most of the trees have grown to heights of 25 to 35 feet. The current height of most of the trees is estimated to range from 35 to 50 feet. In April 2008, seven additional saplings were planted in the rear of the property near monitoring well MW-2. There are currently 101 hybrid poplars at the site (two trees were removed to alleviate overcrowding).

As discussed in Section 3.3 and shown on Figure 6, the PCE concentrations reported for monitoring well MW-2 since June 2006 are an indication that the phytoremediation project has been effective at significantly reducing the average seasonal VOC concentration in groundwater at the site.



Bare-root trees planted in June 2005 - View towards rear of property



June 2007 - View from driveway towards rear of property



September 2009 - View from street towards driveway and rear of property





November 2010 – View from street towards driveway and rear of property  
(compare tree height to photo on previous page)



May 2011 – Same view as above



May 9, 2013 – Same view as previous picture.



September 17, 2015 – Similar view as previous picture.



May 11, 2016 – Similar view as previous picture.



May 11, 2016 – View of the trees from further down the street.



June 2007 - View of front planting strip at Clement Avenue



September 2009 - View of front planting strip at Clement Avenue.  
(Note relative height of gate vs. trees in the pictures above and on next page)



November 2010 – Trees dropping foliage. Also, branches on bottom 6 feet of trunks have been cleared for site visibility.



May 11, 2011 – Same view as above



May 9, 2013 – Same view as previous picture.



May 11, 2016 – Similar view as above.



May 9, 2013 – View from back of property towards the street.



May 11, 2016 – Similar view as above.



September 17, 2015 – View from back of property towards the street.



September 17, 2015 – Panoramic view of property from back of property towards the street.



# Professional Certification

**Groundwater Monitoring Results  
First Semi-Annual 2017 Monitoring Period  
Cargill Salt – Alameda Facility  
Alameda, California**

This report has been prepared by CRAWFORD CONSULTING, INC. with the professional certification of the California professional geologist whose signature appears below.



Dana C. Johnston  
Project Manager



Mark C. Wheeler  
Principal Geologist  
P.G. 4563

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## **Limitations**

This report and the evaluations presented herein have been prepared in accordance with generally accepted professional standards and are based solely on the scope of work and services described herein. This report has been prepared solely for the use of Cargill Salt for the purposes noted herein. Any use of this report, in whole or in part, by a third party for other than the purposes noted herein is at such party's sole risk.

Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-1	11/16/1999	09:56	13.16	3.75	9.41	NA
MW-1	3/30/2000	10:09	13.16	2.81	10.35	0.94
MW-1	5/16/2000	09:43	13.16	3.32	9.84	-0.51
MW-1	7/28/2000	09:11	13.16	3.58	9.58	-0.26
MW-1	11/30/2000	08:36	13.16	3.52	9.64	0.06
MW-1	3/26/2001	08:47	13.16	3.15	10.01	0.37
MW-1	6/25/2001	10:19	13.16	3.53	9.63	-0.38
MW-1	9/28/2001	09:32	13.16	3.96	9.20	-0.43
MW-1	12/17/2001	10:47	13.16	3.23	9.93	0.73
MW-1	3/21/2002	07:28	13.16	2.89	10.27	0.34
MW-1	6/6/2002	08:03	13.16	3.50	9.66	-0.61
MW-1	9/20/2002	08:30	13.16	3.86	9.30	-0.36
MW-1	12/19/2002	08:38	13.16	3.13	10.03	0.73
MW-1	3/4/2003	10:31	13.16	3.08	10.08	0.05
MW-1	6/9/2003	08:32	13.16	3.29	9.87	-0.21
MW-1	9/8/2003	10:02	13.16	3.79	9.37	-0.50
MW-1	12/1/2003	10:16	13.16	3.78	9.38	0.01
MW-1	3/4/2004	09:31	13.16	2.88	10.28	0.90
MW-1	6/2/2004	08:42	13.16	3.45	9.71	-0.57
MW-1	9/14/2004	08:01	13.16	3.87	9.29	-0.42
MW-1	12/8/2004	07:44	13.16	3.23	9.93	0.64
MW-1	3/3/2005	08:07	13.16	2.01	11.15	1.22
MW-1	6/10/2005	07:05	13.16	2.90	10.26	-0.89
MW-1	9/16/2005	08:00	13.16	3.62	9.54	-0.72
MW-1	12/6/2005	08:00	13.16	3.28	9.88	0.34
MW-1	3/10/2006	07:40	13.16	2.28	10.88	1.00
MW-1	6/9/2006	09:45	13.16	3.09	10.07	-0.81
MW-1	9/11/2006	10:24	13.16	3.70	9.46	-0.61
MW-1	12/15/2006	07:34	13.16	2.94	10.22	0.76
MW-1	3/6/2007	09:18	13.16	2.87	10.29	0.07
MW-1	6/15/2007	07:29	13.16	3.30	9.86	-0.43
MW-1	9/11/2007	08:05	13.16	3.85	9.31	-0.55
MW-1	12/4/2007	08:53	13.16	3.58	9.58	0.27
MW-1	3/20/2008	08:13	13.16	3.00	10.16	0.58
MW-1	6/18/2008	08:22	13.16	3.73	9.43	-0.73
MW-1	9/3/2008	08:06	13.16	3.93	9.23	-0.20
MW-1	12/4/2008	08:12	13.16	3.71	9.45	0.22
MW-1	3/5/2009	09:18	13.16	1.83	11.33	1.88
MW-1	6/11/2009	08:40	13.16	3.52	9.64	-1.69
MW-1	9/3/2009	07:57	13.16	3.98	9.18	-0.46
MW-1	3/2/2010	08:10	13.16	2.37	10.79	1.61
MW-1	9/3/2010	07:01	13.16	3.80	9.36	-1.43
MW-1	3/17/2011	08:04	13.16	4.44	8.72	-0.64
MW-1	9/23/2011	07:25	13.16	6.43	6.73	-1.99
MW-1	3/22/2012	07:47	13.16	4.47	8.69	1.96
MW-1	9/17/2012	08:14	13.16	6.66	6.50	-2.19
MW-1	3/6/2013	07:21	13.16	4.98	8.18	1.68
MW-1	9/4/2013	07:46	13.16	6.89	6.27	-1.91
MW-1	3/12/2014	07:45	13.16	5.18	7.98	1.71

Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-1	9/26/2014	08:00	13.16	7.35	5.81	-2.17
MW-1	3/3/2015	07:50	13.16	3.95	9.21	3.40
MW-1	9/2/2015	08:21	13.16	6.87	6.29	-2.92
MW-1	2/2/2016	08:54	13.16	4.57	8.59	2.30
MW-1	9/29/2016	09:39	13.16	6.14	7.02	-1.57
MW-1	2/3/2017	08:13	13.16	0.76	12.40	5.38
MW-2	11/16/1999	11:15	16.22	5.22	11.00	NA
MW-2	3/30/2000	10:05	16.22	2.80	13.42	2.42
MW-2	5/16/2000	09:35	16.22	4.13	12.09	-1.33
MW-2	7/28/2000	09:17	16.22	4.85	11.37	-0.72
MW-2	11/30/2000	08:32	16.22	4.75	11.47	0.10
MW-2	3/26/2001	08:40	16.22	3.28	12.94	1.47
MW-2	6/25/2001	12:12	16.22	4.75	11.47	-1.47
MW-2	9/28/2001	12:20	16.22	5.41	10.81	-0.66
MW-2	12/17/2001	10:44	16.22	4.07	12.15	1.34
MW-2	3/28/2002	09:37	16.22	3.40	12.82	0.67
MW-2	6/6/2002	08:11	16.22	4.70	11.52	-1.30
MW-2	9/20/2002	08:34	16.22	5.28	10.94	-0.58
MW-2	12/19/2002	08:45	16.22	3.37	12.85	1.91
MW-2	3/4/2003	10:26	16.22	3.11	13.11	0.26
MW-2	6/9/2003	08:31	16.22	4.16	12.06	-1.05
MW-2	9/8/2003	10:08	16.22	5.26	10.96	-1.10
MW-2	12/1/2003	10:20	16.22	5.05	11.17	0.21
MW-2	3/4/2004	09:34	16.22	2.86	13.36	2.19
MW-2	6/2/2004	08:53	16.22	4.47	11.75	-1.61
MW-2	9/14/2004	07:59	16.22	5.26	10.96	-0.79
MW-2	12/8/2004	08:00	16.22	4.20	12.02	1.06
MW-2	3/3/2005	08:04	16.22	1.90	14.32	2.30
MW-2	6/10/2005	07:09	16.22	3.74	12.48	-1.84
MW-2	9/16/2005	08:08	16.22	4.92	11.30	-1.18
MW-2	12/6/2005	10:58	16.22	4.39	11.83	0.53
MW-2	3/10/2006	07:47	16.22	2.13	14.09	2.26
MW-2	6/9/2006	10:03	16.22	3.75	12.47	-1.62
MW-2	9/11/2006	10:22	16.22	4.94	11.28	-1.19
MW-2	12/15/2006	07:32	16.22	4.08	12.14	0.86
MW-2	3/6/2007	09:13	16.22	3.27	12.95	0.81
MW-2	6/15/2007	07:31	16.22	4.57	11.65	-1.30
MW-2	9/11/2007	08:07	16.22	5.60	10.62	-1.03
MW-2	12/4/2007	08:47	16.22	4.99	11.23	0.61
MW-2	3/20/2008	08:17	16.22	3.48	12.74	1.51
MW-2	6/18/2008	08:27	16.22	4.93	11.29	-1.45
MW-2	9/3/2008	08:08	16.22	5.58	10.64	-0.65
MW-2	12/4/2008	08:14	16.22	5.07	11.15	0.51
MW-2	3/5/2009	11:10	16.22	2.30	13.92	2.77
MW-2	6/11/2009	08:41	16.22	4.44	11.78	-2.14
MW-2	9/3/2009	08:01	16.22	5.55	10.67	-1.11
MW-2	3/2/2010	08:12	16.22	2.88	13.34	2.67
MW-2	9/3/2010	07:04	16.22	5.18	11.04	-2.30
MW-2	3/17/2011	08:08	16.22	3.14	13.08	2.04

Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-2	9/23/2011	07:27	16.22	6.13	10.09	-2.99
MW-2	3/22/2012	07:42	16.22	4.24	11.98	1.89
MW-2	9/17/2012	08:18	16.22	6.77	9.45	-2.53
MW-2	3/6/2013	07:24	16.22	4.15	12.07	2.62
MW-2	9/4/2013	07:40	16.22	NA	NA	NA
MW-2	3/12/2014	07:47	16.22	5.12	11.10	NA
MW-2	9/26/2014	08:08	16.22	7.65	8.57	-2.53
MW-2	3/3/2015	07:52	16.22	3.80	12.42	3.85
MW-2	9/2/2015	08:27	16.22	6.63	9.59	-2.83
MW-2	2/2/2016	08:57	16.22	4.10	12.12	2.53
MW-2	9/29/2016	09:35	16.22	6.73	9.49	-2.63
MW-2	2/3/2017	08:15	16.22	1.90	14.32	4.83
MW-3	11/16/1999	15:43	13.34	4.34	9.00	NA
MW-3	3/30/2000	10:01	13.34	2.77	10.57	1.57
MW-3	5/16/2000	09:46	13.34	3.44	9.90	-0.67
MW-3	7/28/2000	09:05	13.34	3.72	9.62	-0.28
MW-3	11/30/2000	08:34	13.34	3.73	9.61	-0.01
MW-3	3/26/2001	08:54	13.34	3.51	9.83	0.22
MW-3	6/25/2001	10:21	13.34	3.65	9.69	-0.14
MW-3	9/28/2001	09:30	13.34	3.96	9.38	-0.31
MW-3	12/17/2001	10:38	13.34	3.28	10.06	0.68
MW-3	3/21/2002	07:28	13.34	3.10	10.24	0.18
MW-3	6/6/2002	08:07	13.34	3.63	9.71	-0.53
MW-3	9/20/2002	08:25	13.34	3.82	9.52	-0.19
MW-3	12/19/2002	08:42	13.34	3.10	10.24	0.72
MW-3	3/4/2003	10:36	13.34	3.29	10.05	-0.19
MW-3	6/9/2003	08:28	13.34	3.41	9.93	-0.12
MW-3	9/8/2003	10:00	13.34	3.85	9.49	-0.44
MW-3	12/1/2003	10:30	13.34	3.90	9.44	-0.05
MW-3	3/4/2004	09:22	13.34	3.11	10.23	0.79
MW-3	6/2/2004	08:46	13.34	3.53	9.81	-0.42
MW-3	9/14/2004	08:05	13.34	4.07	9.27	-0.54
MW-3	12/8/2004	07:40	13.34	3.73	9.61	0.34
MW-3	3/3/2005	07:53	13.34	2.36	10.98	1.37
MW-3	6/10/2005	07:14	13.34	3.15	10.19	-0.79
MW-3	9/16/2005	08:04	13.34	3.90	9.44	-0.75
MW-3	12/6/2005	08:04	13.34	3.35	9.99	0.55
MW-3	3/10/2006	07:43	13.34	2.89	10.45	0.46
MW-3	6/9/2006	09:33	13.34	3.26	10.08	-0.37
MW-3	9/11/2006	10:19	13.34	3.70	9.64	-0.44
MW-3	12/15/2006	07:37	13.34	3.10	10.24	0.60
MW-3	3/6/2007	09:16	13.34	3.04	10.30	0.06
MW-3	6/15/2007	07:27	13.34	3.60	9.74	-0.56
MW-3	9/11/2007	08:03	13.34	3.87	9.47	-0.27
MW-3	12/4/2007	08:50	13.34	3.62	9.72	0.25
MW-3	3/20/2008	08:15	13.34	3.13	10.21	0.49
MW-3	6/18/2008	08:24	13.34	3.90	9.44	-0.77
MW-3	9/3/2008	08:02	13.34	3.92	9.42	-0.02
MW-3	12/4/2008	08:10	13.34	3.59	9.75	0.33

Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-3	3/5/2009	09:23	13.34	2.79	10.55	0.80
MW-3	6/11/2009	08:38	13.34	3.14	10.20	-0.35
MW-3	9/3/2009	07:55	13.34	4.31	9.03	-1.17
MW-3	3/2/2010	08:09	13.34	2.94	10.40	1.37
MW-3	9/3/2010	07:07	13.34	3.75	9.59	-0.81
MW-3	3/17/2011	07:59	13.34	4.88	8.46	-1.13
MW-3	9/23/2011	07:23	13.34	6.33	7.01	-1.45
MW-3	3/22/2012	07:45	13.34	5.05	8.29	1.28
MW-3	9/17/2012	08:10	13.34	6.54	6.80	-1.49
MW-3	3/6/2013	07:12	13.34	5.22	8.12	1.32
MW-3	9/4/2013	07:48	13.34	6.58	6.76	-1.36
MW-3	3/12/2014	07:49	13.34	5.33	8.01	1.25
MW-3	9/26/2014	07:50	13.34	NA	NA	NA
MW-3	3/3/2015	07:48	13.34	4.90	8.44	NA
MW-3	9/2/2015	08:18	13.34	7.29	6.05	-2.39
MW-3	2/2/2016	08:52	13.34	4.90	8.44	2.39
MW-3	9/29/2016	09:37	13.34	6.02	7.32	-1.12
MW-3	2/3/2017	08:11	13.34	1.43	11.91	4.59
MW-4	12/17/2001	10:40	12.43	2.55	9.88	NA
MW-4	3/28/2002	08:05	12.43	3.06	9.37	-0.51
MW-4	6/6/2002	07:57	12.43	2.85	9.58	0.21
MW-4	9/20/2002	08:28	12.43	3.21	9.22	-0.36
MW-4	12/19/2002	08:53	12.43	3.70	8.73	-0.49
MW-4	3/4/2003	10:34	12.43	3.14	9.29	0.56
MW-4	6/9/2003	08:29	12.43	2.82	9.61	0.32
MW-4	9/8/2003	10:04	12.43	3.43	9.00	-0.61
MW-4	12/1/2003	10:14	12.43	3.12	9.31	0.31
MW-4	3/4/2004	09:27	12.43	2.81	9.62	0.31
MW-4	6/2/2004	08:44	12.43	3.34	9.09	-0.53
MW-4	9/14/2004	08:03	12.43	3.51	8.92	-0.17
MW-4	12/8/2004	07:36	12.43	3.10	9.33	0.41
MW-4	3/3/2005	07:44	12.43	2.48	9.95	0.62
MW-4	6/10/2005	07:02	12.43	2.47	9.96	0.01
MW-4	9/16/2005	08:12	12.43	3.23	9.20	-0.76
MW-4	12/6/2005	07:50	12.43	3.17	9.26	0.06
MW-4	3/10/2006	07:37	12.43	3.77	8.66	-0.60
MW-4	6/9/2006	07:30	12.43	2.49	9.94	1.28
MW-4	9/11/2006	10:17	12.43	3.19	9.24	-0.70
MW-4	12/21/2006	NR	12.43	2.90	9.53	0.29
MW-4	3/6/2007	09:20	12.43	2.54	9.89	0.36
MW-4	6/15/2007	07:33	12.43	3.03	9.40	-0.49
MW-4	9/11/2007	08:11	12.43	3.27	9.16	-0.24
MW-4	12/4/2007	08:55	12.43	3.25	9.18	0.02
MW-4	3/20/2008	08:20	12.43	2.65	9.78	0.60
MW-4	6/18/2008	08:31	12.43	3.35	9.08	-0.70
MW-4	9/3/2008	07:58	12.43	3.28	9.15	0.07
MW-4	12/4/2008	08:17	12.43	3.12	9.31	0.16
MW-4	3/5/2009	09:27	12.43	2.16	10.27	0.96
MW-4	6/11/2009	08:43	12.43	2.84	9.59	-0.68



Table 1. Groundwater Level Data

Well/ Piezometer	Date	Time	Casing Elevation (feet, MSL)	Depth to Water (feet)	Water Elevation (feet, MSL)	Elev. Change from Last Measurement (feet)
MW-4	9/3/2009	08:04	12.43	3.49	8.94	-0.65
MW-4	3/2/2010	08:14	12.43	2.32	10.11	1.17
MW-4	9/3/2010	07:10	12.43	3.10	9.33	-0.78
MW-4	3/17/2011	07:55	12.43	4.52	7.91	-1.42
MW-4	9/23/2011	07:21	12.43	5.38	7.05	-0.86
MW-4	3/22/2012	07:50	12.43	4.58	7.85	0.80
MW-4	9/17/2012	08:21	12.43	5.45	6.98	-0.87
MW-4	3/6/2013	07:27	12.43	4.65	7.78	0.80
MW-4	9/4/2013	07:58	12.43	5.47	6.96	-0.82
MW-4	3/12/2014	07:52	12.43	9.25	3.18	-3.78
MW-4	9/26/2014	08:14	12.43	5.57	6.86	3.68
MW-4	3/3/2015	07:55	12.43	4.40	8.03	1.17
MW-4	9/2/2015	08:10	12.43	5.56	6.87	-1.16
MW-4	2/2/2016	09:00	12.43	4.05	8.38	1.51
MW-4	9/29/2016	09:41	12.43	4.67	7.76	-0.62
MW-4	2/3/2017	08:18	12.43	2.04	10.39	2.63

**Key:**

NA = Not available

feet, MSL = feet, relative to Mean Sea Level

Casing elevations for all wells were resurveyed on September 6, 2006 by CSS Environmental Services for Geotracker compliance.

Table 2.  
Relative Percent Difference Based on Duplicate Samples

First Quarter 2017

Analysis	Well MW-2 Results	Duplicate (DUP-1) Results	RPD <sup>1</sup> (%)
<b>Volatile Organic Compounds (µg/L)</b>			
Cis-1,2-Dichloroethene	47	59	22.6
Trichloroethene (TCE)	31	36	14.9
Tetrachloroethene (PCE)	600	720	18.2
<sup>1</sup> RPD = relative percent difference Results measured in micrograms per liter (µg/L) All other 8010 list analytes not detected (by 8260).			

Table 3a. Summary of Groundwater Monitoring Well Data - First Quarter 2017

Well No. Field Date	MW-1 2/3/2017	MW-2 2/3/2017	MW-3 2/3/2017	MW-4 2/3/2017	MCL <sup>1</sup>
DCE <sup>2</sup>	<0.5	<2.5	<0.5	<0.5	6
DCA <sup>3</sup>	<0.5	<2.5	<0.5	<0.5	5
cis-1,2-DCE <sup>4</sup>	<b>8.0</b>	<b>47</b>	<0.5	<0.5	6
TCA <sup>5</sup>	<0.5	<2.5	<0.5	<0.5	200
TCE <sup>6</sup>	<b>18</b>	<b>31</b>	<0.5	<0.5	5
PCE <sup>7</sup>	<b>5.4</b>	<b>600</b>	<0.5	<0.5	5
Other analytes <sup>8</sup>	nd <sup>9</sup>	nd	nd	nd	nd

Notes:

Results measured in micrograms per liter (µg/L)

<sup>1</sup> MCL = California Primary Drinking Water Standard - Maximum Contaminant Level

<sup>2</sup> DCE = 1,1-Dichloroethene

<sup>3</sup> DCA = 1,1-Dichloroethane

<sup>4</sup> cis-1,2-DCE = cis-1,2-Dichloroethene

<sup>5</sup> TCA = 1,1,1-Trichloroethane

<sup>6</sup> TCE = Trichloroethene

<sup>7</sup> PCE = Tetrachloroethene

<sup>8</sup> All other 8010 list analytes

<sup>9</sup> nd = not detected above laboratory reporting limit

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Results measured in micrograms per liter (µg/L)

Well No.	MW-1																							MCL <sup>1</sup>			
	Field Date	11/16/99	3/30/00	5/16/00	7/28/00	11/30/00	3/26/01	6/25/01	9/28/01	12/17/01	3/21/02	6/6/02	9/20/02	12/19/02	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05		6/10/05	9/16/05	
DCE <sup>2</sup>	<50.0	<b>13</b>	<10	<b>15</b>	<b>14</b>	<13	<b>14</b>	<b>15</b>	<13	<13	<13	<13	<13	<13	<10	<b>12</b>	<b>5.2</b>	<b>8.4</b>	<5.0	<b>5.8</b>	<b>6.6</b>	<5.0	<5.0	<2.0	<5.0	6	
CFC 113 <sup>3</sup>	na <sup>4</sup>	<b>1.4</b>	<10	<10	<8.3	<50	<50	<50	<50	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	ne <sup>5</sup>
DCA <sup>6</sup>	<50.0	<b>0.8</b>	<10	<10	<4.2	<13	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	5
Chloroform	<50.0	<b>0.6*</b>	<10	<10	<8.3	<13	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10	ne
cis-1,2-DCE <sup>7</sup>	<10	<10	<10	<10	<4.2	<13	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	6
TCA <sup>8</sup>	<50.0	<b>1.6</b>	<10	<10	<4.2	<13	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	200
TCE <sup>9</sup>	<b>178</b>	<b>150</b>	<b>190</b>	<b>170</b>	<b>130</b>	<b>180</b>	<b>250</b>	<b>210</b>	<b>190</b>	<b>160</b>	<b>140</b>	<b>190</b>	<b>68</b>	<b>97</b>	<b>90</b>	<b>110</b>	<b>130</b>	<b>53</b>	<b>72</b>	<b>81</b>	<b>39</b>	<b>15</b>	<b>23</b>	<b>34</b>	<b>5</b>	<b>5</b>	
PCE <sup>10</sup>	<b>906</b>	<b>1,400</b>	<b>1,900</b>	<b>1,200</b>	<b>880</b>	<b>1,000</b>	<b>1,400</b>	<b>1,000</b>	<b>1,400</b>	<b>1,100</b>	<b>980</b>	<b>1,100</b>	<b>600</b>	<b>730</b>	<b>770</b>	<b>780</b>	<b>850</b>	<b>370</b>	<b>490</b>	<b>620</b>	<b>380</b>	<b>160</b>	<b>180</b>	<b>240</b>	<b>5</b>	<b>5</b>	
Other analytes <sup>11</sup>	nd <sup>12</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Well No.	MW-2																							MCL <sup>1</sup>			
	Field Date	11/16/99	3/30/00	5/16/00	7/28/00	11/30/00	3/26/01	6/25/01	9/28/01	12/17/01	3/28/02	6/6/02	9/20/02	12/30/02	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05		6/10/05	9/16/05	
DCE <sup>2</sup>	<50.0	<0.5	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	6	
CFC 113 <sup>3</sup>	na	<0.5	<25	<25	<17	<100	<100	<100	<100	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	ne <sup>5</sup>	
DCA <sup>6</sup>	<50.0	<0.5	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	5	
Chloroform	<50.0	<0.5	<25	<25	<17	<25	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<40	ne	
cis-1,2-DCE <sup>7</sup>	<50.0	<0.5	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	6	
TCA <sup>8</sup>	<50.0	<b>5.0</b>	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	200	
TCE <sup>9</sup>	<50	<b>29</b>	<b>53</b>	<25	<b>20</b>	<b>40</b>	<b>78</b>	<25	<25	<b>49</b>	<b>52</b>	<b>32</b>	<25	<b>58</b>	<b>41</b>	<b>28</b>	<b>25</b>	<b>39</b>	<b>49</b>	<b>37</b>	<b>30</b>	<b>78</b>	<b>43</b>	<b>29</b>	<b>5</b>	<b>5</b>	
PCE <sup>10</sup>	<b>840</b>	<b>3,600</b>	<b>3,200</b>	<b>3,300</b>	<b>1,700</b>	<b>2,200</b>	<b>4,400</b>	<b>1,700</b>	<b>1,700</b>	<b>3,500</b>	<b>3,800</b>	<b>2,100</b>	<b>1,800</b>	<b>3,900</b>	<b>3,800</b>	<b>2,500</b>	<b>2,500</b>	<b>3,000</b>	<b>4,100</b>	<b>3,800</b>	<b>2,800</b>	<b>7,300</b>	<b>3,600</b>	<b>2,500</b>	<b>5</b>	<b>5</b>	
Other analytes <sup>11</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Notes:

<sup>1</sup> MCL = California Primary Drinking Water Standard - Maximum Contaminant Level (in micrograms per liter [µg/L])

<sup>2</sup> DCE = 1,1-Dichloroethene

<sup>3</sup> CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane)

<sup>4</sup> na = not analyzed

<sup>5</sup> ne = not established or none applicable

<sup>6</sup> DCA = 1,1-Dichloroethane

<sup>7</sup> cis-1,2-DCE = cis-1,2-Dichloroethene

<sup>8</sup> TCA = 1,1,1-Trichloroethane

<sup>9</sup> TCE = Trichloroethene

<sup>10</sup> PCE = Tetrachloroethene

<sup>11</sup> All other 8010 list analytes

<sup>12</sup> nd = not detected above laboratory reporting limit

\* Chloroform detected in equipment blank at 1.6 µg/L for 3/30/00 event.

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Well No.	MW-1																												MCL <sup>1</sup>				
	Field Date	12/6/05	3/10/06	6/9/06	9/11/06	#####	3/6/07	6/15/07	9/11/07	12/4/07	3/20/08	6/18/08	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	3/3/15		9/2/15	2/2/16	9/29/16	2/3/17
DCE <sup>2</sup>	<2.0	<0.5	<2.0	<b>3.3</b>	<2.0	<2.0	<b>3.0</b>	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	<b>6.1</b>	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<b>0.56</b>	<0.5	<0.5	<0.5	<0.5	<0.5	6
CFC 113 <sup>3</sup>	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<0.5	<0.5	<0.5	<0.5	<2.0	ne <sup>5</sup>	
DCA <sup>6</sup>	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	
Chloroform	<4.0	<b>1.4</b>	<4.0	<4.0	<4.0	<4.0	<4.0	<10	<10	<4.0	<10	<10	<10	<b>1.9</b>	<5.0	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.5	<1.0	<1.0	<1.0	<0.5	ne	
cis-1,2-DCE <sup>7</sup>	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<b>0.62</b>	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<b>6.6</b>	<0.5	<b>1.8</b>	<0.5	<b>8.0</b>	6	
TCA <sup>8</sup>	<2.0	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<0.5	<2.5	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200	
TCE <sup>9</sup>	<b>16</b>	<b>3.4</b>	<b>22</b>	<b>47</b>	<b>20</b>	<b>17</b>	<b>38</b>	<b>51</b>	<b>29</b>	<b>18</b>	<b>42</b>	<b>65</b>	<b>42</b>	<b>6.5</b>	<b>40</b>	<b>68</b>	<b>27</b>	<b>57</b>	<b>36</b>	<b>89</b>	<b>40</b>	<b>37</b>	<b>60</b>	<b>19</b>	<b>100</b>	<b>8.6</b>	<b>38</b>	<b>7.6</b>	<b>27</b>	<b>6.9</b>	<b>18</b>	5	
PCE <sup>10</sup>	<b>140</b>	<b>39</b>	<b>140</b>	<b>400</b>	<b>210</b>	<b>170</b>	<b>310</b>	<b>430</b>	<b>330</b>	<b>170</b>	<b>390</b>	<b>620</b>	<b>320</b>	<b>68</b>	<b>300</b>	<b>640</b>	<b>170</b>	<b>420</b>	<b>330</b>	<b>850</b>	<b>350</b>	<b>380</b>	<b>390</b>	<b>190</b>	<b>180</b>	<b>78</b>	<b>130</b>	<b>58</b>	<b>58</b>	<b>48</b>	<b>5.4</b>	5	
Other analytes <sup>11</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd <sup>9</sup>	nd	nd	nd	nd	nd	nd	nd	nd	--	

Well No.	MW-2																												MCL <sup>1</sup>				
	Field Date	12/6/05	3/10/06	6/9/06	9/11/06	#####	3/6/07	6/15/07	9/11/07	12/4/07	3/20/08	6/18/08	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	3/3/15		9/2/15	2/2/16	9/29/16	2/3/17
DCE <sup>2</sup>	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	6
CFC 113 <sup>3</sup>	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<10	ne <sup>5</sup>
DCA <sup>6</sup>	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	5
Chloroform	<50	<50	<40	<20	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<50	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	na	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<2.5	ne	
cis-1,2-DCE <sup>7</sup>	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<b>8.0</b>	<b>6.2</b>	<b>13</b>	<b>1.3</b>	<b>3.8</b>	<0.5	<b>32</b>	na	<b>3.2</b>	<b>0.72</b>	<b>100</b>	<b>9.2</b>	<b>16</b>	<b>2.4</b>	<b>47</b>	6	
TCA <sup>8</sup>	<25	<25	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<25	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	200	
TCE <sup>9</sup>	<b>45</b>	<b>59</b>	<20	<20	<20	<20	<b>22</b>	<b>31</b>	<20	<20	<b>21</b>	<20	<20	<20	<25	<5.0	<b>9.5</b>	<5.0	<b>6.3</b>	<b>0.93</b>	<b>2.3</b>	<0.5	<b>3.3</b>	na	<0.5	<0.5	<b>10</b>	<b>11</b>	<b>24</b>	<b>6.0</b>	<b>31</b>	5	
PCE <sup>10</sup>	<b>3,300</b>	<b>5,200</b>	<b>1,600</b>	<b>990</b>	<b>1,000</b>	<b>1,600</b>	<b>2,400</b>	<b>1,700</b>	<b>1,100</b>	<b>2,900</b>	<b>1,700</b>	<b>1,600</b>	<b>2,000</b>	<b>2,300</b>	<b>1,500</b>	<b>410</b>	<b>860</b>	<b>180</b>	<b>530</b>	<b>40</b>	<b>120</b>	<b>18</b>	<b>220</b>	na	<b>5.4</b>	<b>11</b>	<b>600</b>	<b>20</b>	<b>25</b>	<b>39</b>	<b>600</b>	5	
Other analytes <sup>11</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na	nd	nd	nd	nd	nd	nd	nd	--	

Notes:

<sup>1</sup> MCL = California Primary Drinking Water Standard - Maximum Contaminant Level (in micrograms per liter [µg/L])

<sup>2</sup> DCE = 1,1-Dichloroethene

<sup>3</sup> CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane)

<sup>4</sup> na = not analyzed

<sup>5</sup> ne = not established or none applicable

<sup>6</sup> DCA = 1,1-Dichloroethane

<sup>7</sup> cis-1,2-DCE = cis-1,2-Dichloroethene

<sup>8</sup> TCA = 1,1,1-Trichloroethane

<sup>9</sup> TCE = Trichloroethene

<sup>10</sup> PCE = Tetrachloroethene

<sup>11</sup> All other 8010 list analytes

<sup>12</sup> nd = not detected above laboratory reporting limit

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Results measured in micrograms per liter (µg/L)

Well No.	MW-3																										MCL <sup>1</sup>		
Field Date	11/16/99	3/30/00	5/16/00	7/28/00	11/30/00	3/26/01	6/25/01	9/28/01	12/17/01	3/21/02	6/6/02	9/20/02	12/19/02	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05	6/10/05	9/16/05	12/6/05	3/10/06	6/9/06	MCL <sup>1</sup>	
DCE <sup>2</sup>	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<b>0.51</b>	<0.5	<b>0.81</b>	<0.5	<0.5	<b>0.68</b>	<b>2.4</b>	<b>1.5</b>	<b>1.1</b>	<b>0.86</b>	<b>4.3</b>	6	
CFC 113 <sup>3</sup>	na	<0.5	<0.5	<0.5	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ne <sup>5</sup>	
DCA <sup>6</sup>	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<b>0.50</b>	5	
Chloroform	<0.500	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	ne
cis-1,2-DCE <sup>7</sup>	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6	
TCA <sup>8</sup>	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<b>1.0</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200	
TCE <sup>9</sup>	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	
PCE <sup>10</sup>	<0.500	<0.5	<0.5	<b>0.8</b>	<0.5	<0.5	<0.5	<0.5	<b>0.81</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<b>0.90</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	
Other analytes <sup>11</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--	

Well No.	MW-4																										MCL <sup>1</sup>		
Field Date	12/17/01	3/28/02	6/6/02	9/20/02	12/19/02	3/4/03	6/9/03	9/8/03	12/1/03	3/4/04	6/2/04	9/14/04	12/8/04	3/3/05	6/10/05	9/16/05	12/6/05	3/10/06	6/9/06	9/11/06	12/21/06	3/6/07	6/15/07	9/11/07	12/4/07	3/20/08	6/18/08	MCL <sup>1</sup>	
DCE <sup>2</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6	
CFC 113 <sup>3</sup>	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ne <sup>5</sup>	
DCA <sup>6</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	
Chloroform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ne
cis-1,2-DCE <sup>7</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6	
TCA <sup>8</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200	
TCE <sup>9</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	
PCE <sup>10</sup>	<b>2.6</b>	<b>2.8</b>	<b>2.0</b>	<b>2.5</b>	<b>1.1</b>	<b>2.1</b>	<b>2.1</b>	<b>1.6</b>	<b>1.6</b>	<b>1.7</b>	<b>1.4</b>	<b>1.3</b>	<b>1.2</b>	<b>0.93</b>	<b>0.98</b>	<b>0.8</b>	<b>1.1</b>	<b>0.79</b>	<b>0.64</b>	<b>0.70</b>	<b>0.63</b>	<b>0.70</b>	<b>0.75</b>	<b>0.86</b>	<b>0.92</b>	<b>0.91</b>	<b>0.86</b>	5	
Other analytes <sup>11</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--	

Notes:

<sup>1</sup> MCL = California Primary Drinking Water Standard - Maximum Contaminant Level (in micrograms per liter [µg/L])

<sup>2</sup> DCE = 1,1-Dichloroethene

<sup>3</sup> CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane)

<sup>4</sup> na = not analyzed

<sup>5</sup> ne = not established or none applicable

<sup>6</sup> DCA = 1,1-Dichloroethane

<sup>7</sup> cis-1,2-DCE = cis-1,2-Dichloroethene

<sup>8</sup> TCA = 1,1,1-Trichloroethane

<sup>9</sup> TCE = Trichloroethene

<sup>10</sup> PCE = Tetrachloroethene

<sup>11</sup> All other 8010 list analytes

<sup>12</sup> nd = not detected above laboratory reporting limit

Table 3b. Historical Summary of Groundwater Monitoring Well Data

Well No.	MW-3																											MCL <sup>1</sup>	
	Field Date	9/11/06	12/15/06	3/6/07	6/15/07	9/11/07	12/4/07	3/20/08	6/18/08	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	3/3/15	9/2/15	2/2/16		9/29/16
DCE <sup>2</sup>	2.8	1.6	1.5	2.4	1.4	1.1	1.0	1.4	0.79	0.59	<0.5	0.95	0.51	<0.5	0.64	13	34	45	53	50	43	61	53	45	30	33	29	<0.5	6
CFC 113 <sup>3</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	<2.0	<0.5	<0.5	<0.5	<0.5	<2.0	ne <sup>5</sup>
DCA <sup>6</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.90	1.4	1.4	1.7	2.2	1.5	<2.5	1.8	2.1	1.8	1.3	1.8	<0.5	5
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<0.5	<1.0	<1.0	<1.0	<1.0	<0.5	ne
cis-1,2-DCE <sup>7</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6
TCA <sup>8</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	1.5	1.5	1.2	1.1	<2.5	0.87	0.75	<0.5	<0.5	<0.5	<0.5	200
TCE <sup>9</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
PCE <sup>10</sup>	<0.5	0.56	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.79	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
Other analytes <sup>11</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Well No.	MW-4																			MCL <sup>1</sup>	
	Field Date	9/3/08	12/4/08	3/5/09	6/11/09	9/3/09	3/2/10	9/3/10	3/17/11	9/23/11	3/22/12	9/17/12	3/6/13	9/4/13	3/12/14	9/26/14	3/3/15	9/2/15	2/2/16		9/29/16
DCE <sup>2</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6
CFC 113 <sup>3</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	ne <sup>5</sup>
DCA <sup>6</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
Chloroform	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	ne
cis-1,2-DCE <sup>7</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6
TCA <sup>8</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200
TCE <sup>9</sup>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
PCE <sup>10</sup>	0.84	0.65	0.62	0.70	0.79	0.78	0.64	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
Other analytes <sup>11</sup>	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Notes:

<sup>1</sup> MCL = California Primary Drinking Water Standard - Maximum Contaminant Level (in micrograms per liter [µg/L])

<sup>2</sup> DCE = 1,1-Dichloroethene

<sup>3</sup> CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane)

<sup>4</sup> na = not analyzed

<sup>5</sup> ne = not established or none applicable

<sup>6</sup> DCA = 1,1-Dichloroethane

<sup>7</sup> cis-1,2-DCE = cis-1,2-Dichloroethene

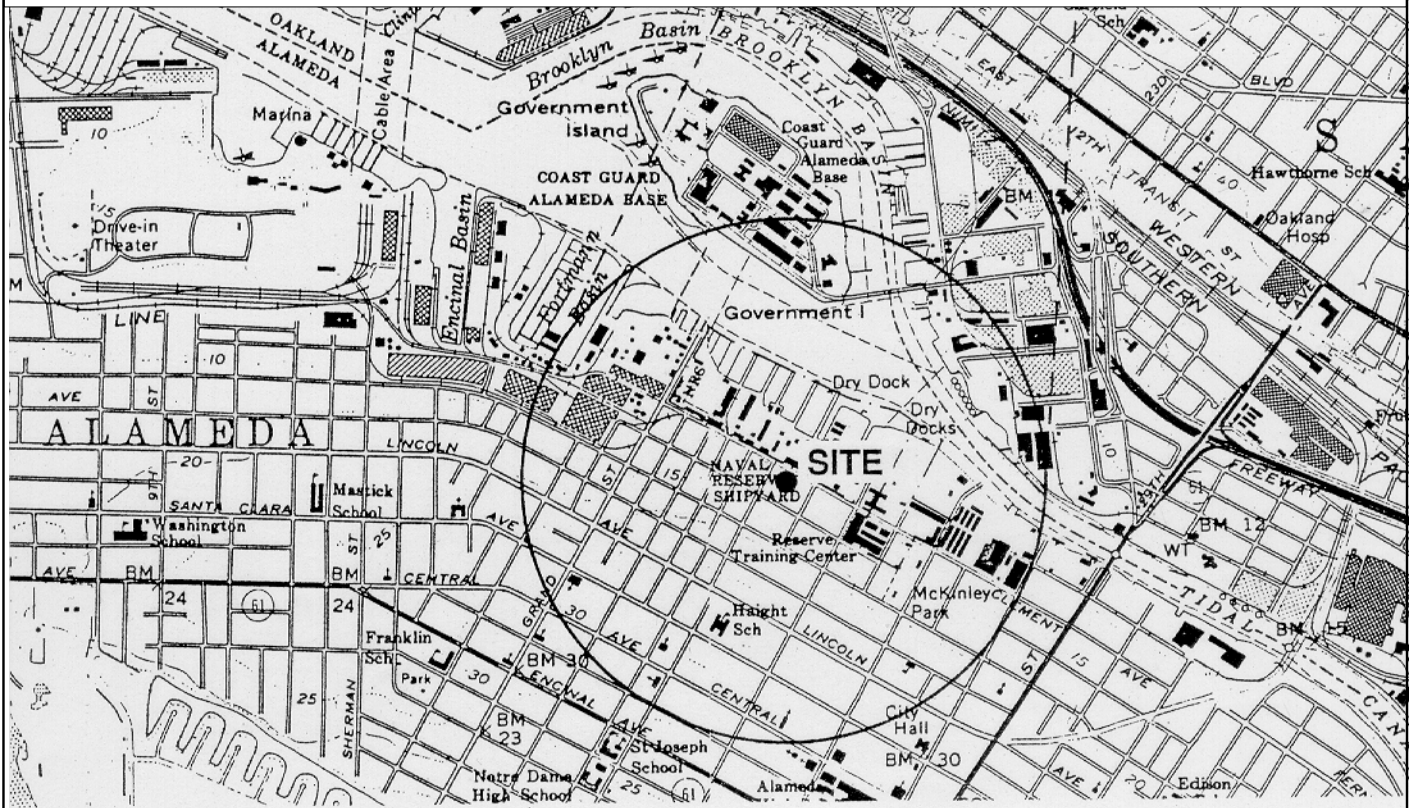
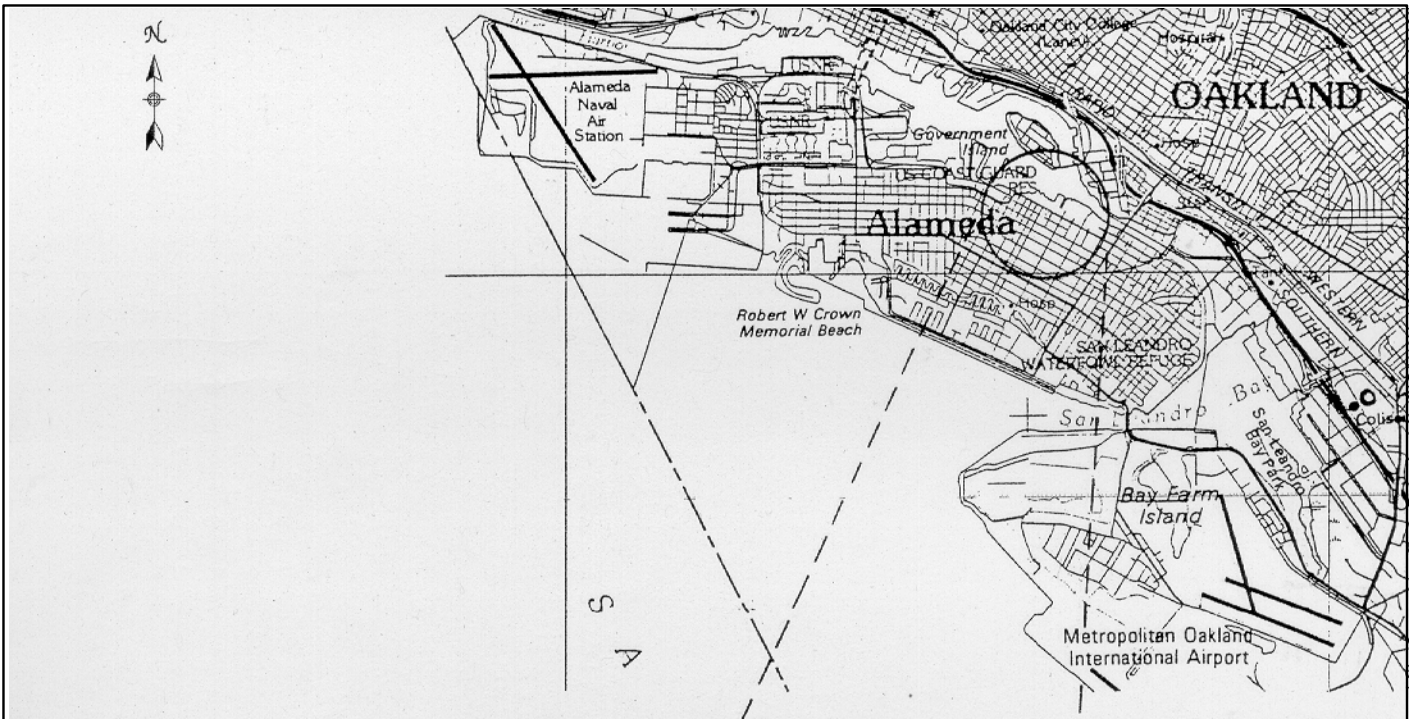
<sup>8</sup> TCA = 1,1,1-Trichloroethane

<sup>9</sup> TCE = Trichloroethene

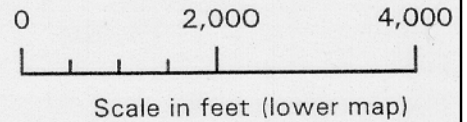
<sup>10</sup> PCE = Tetrachloroethene

<sup>11</sup> All other 8010 list analytes

<sup>12</sup> nd = not detected above laboratory reporting limit



Base map (upper): U.S.G.S. 1:1,000,000-scale series (Topographic)  
 San Francisco Quadrangle, California, 1978.  
 Base map (lower): U.S.G.S. 7.5 minute series (Topographic)  
 Oakland East and Oakland West Quadrangles, California,  
 1959, Photorevised 1980.



Project No. CS1605  
 Cargill Salt Dispensing Systems Division  
 2016 Clement Avenue, Alameda, California  
**Figure 1. Site Location**



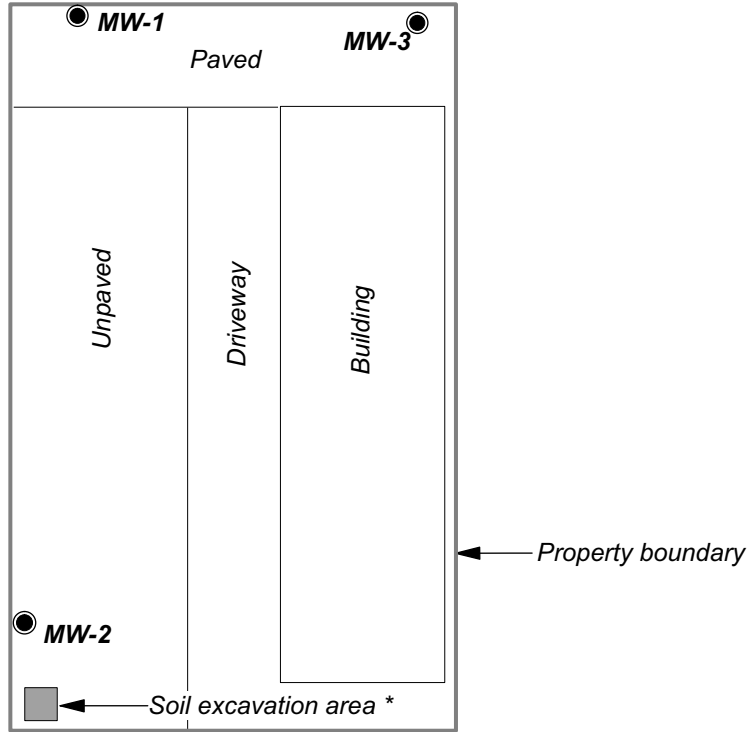


MW-4

Curb line (Typ.)

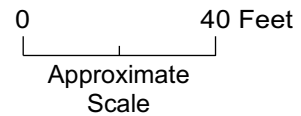


Clement Avenue



**EXPLANATION**

- Groundwater monitoring well
- \* Excavated in February 1994



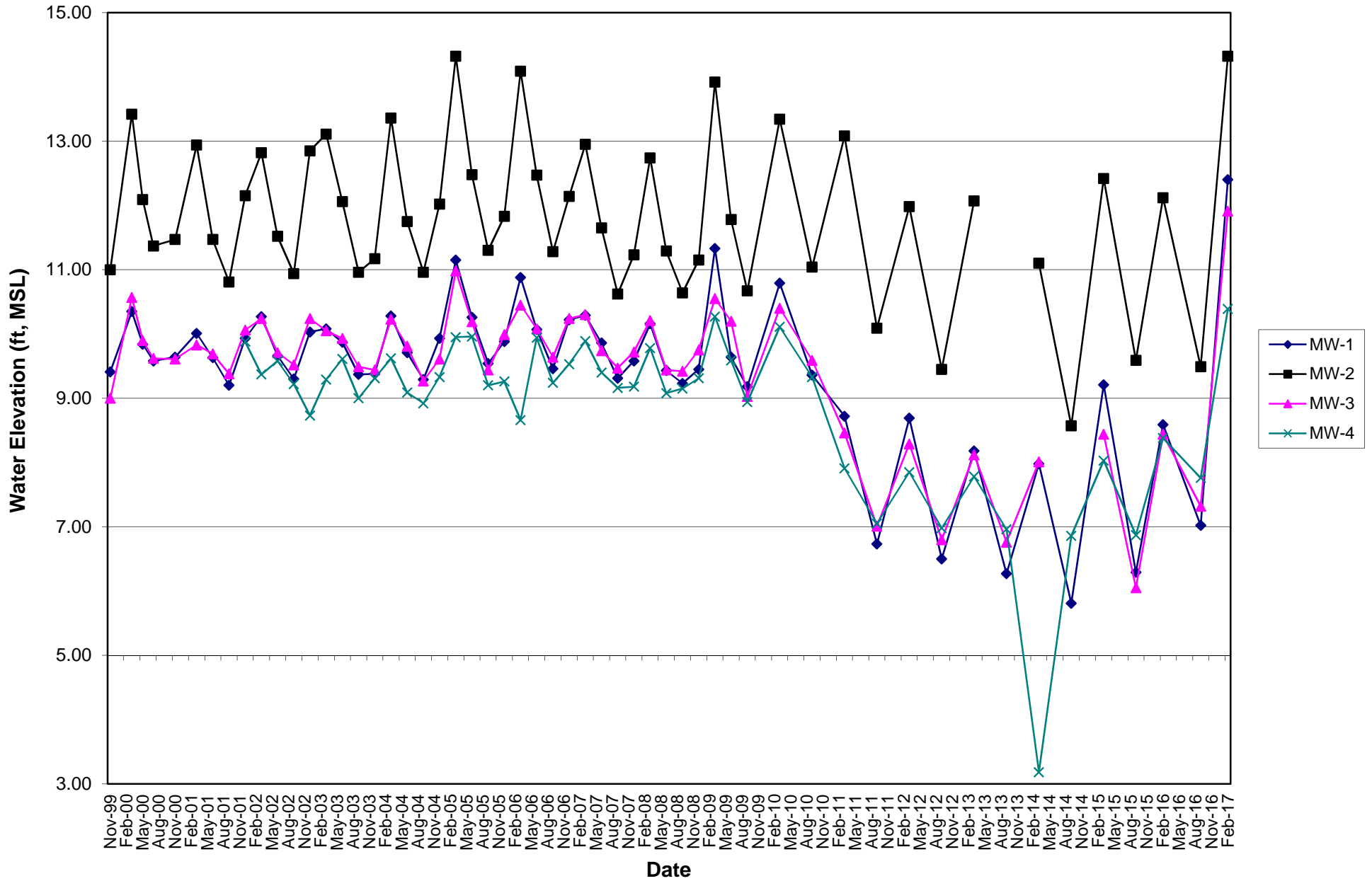
1605fig215Q1.dsf 3/18/15

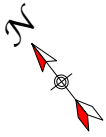
Base map from Conor Pacific/EFW, Off-site Groundwater Characterization, August 21, 2002.



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 Cargill Salt Dispensing Systems Division  
 2016 Clement Avenue, Alameda, California  
**Figure 2. Groundwater Monitoring Well Locations**

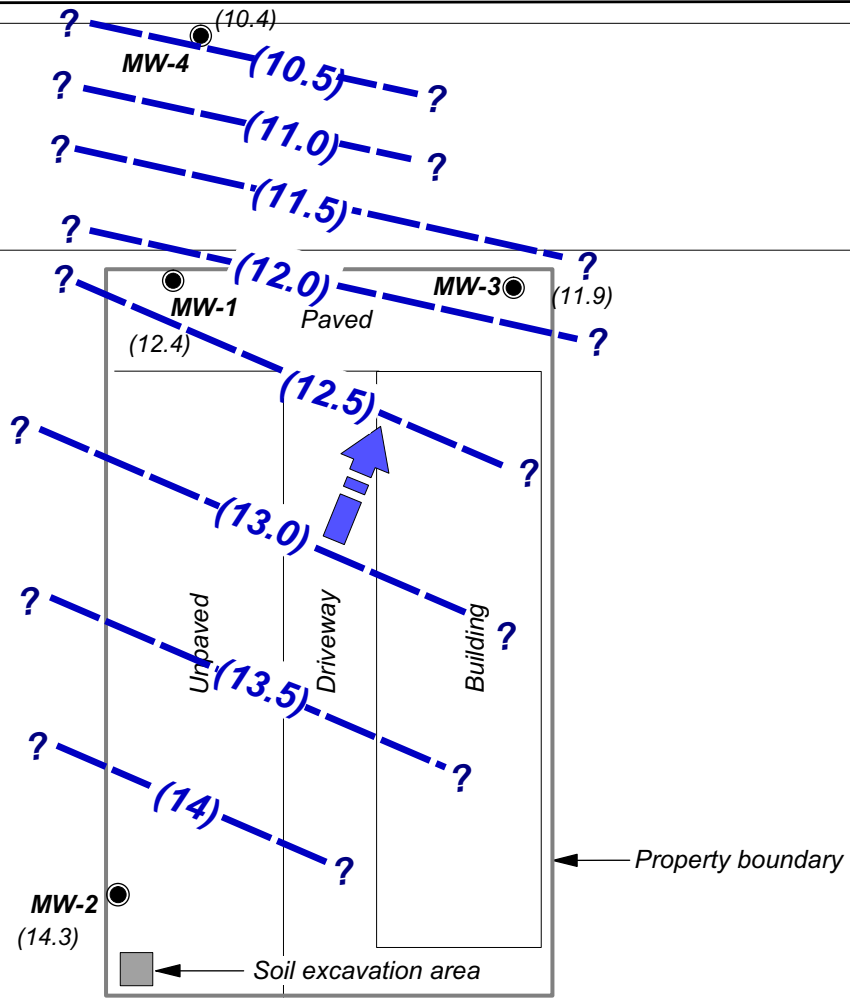
Figure 3. Graphical Summary of Groundwater Elevations





Curb line (Typ.)

Clement Avenue



**EXPLANATION**

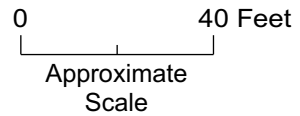
● Monitoring well

(11.9) Groundwater elevation (Ft.-MSL);  
measured 2/3/17

? - (11) - Groundwater elevation contour  
(Ft.-MSL)



Approximate direction of groundwater flow



Base map from Conor Pacific/EFW, Off-Site  
Groundwater Characterization, August 21, 2002.

1605fig417Q1.dsf 5/5/17



Project No. CS1605  
Cargill Salt Dispensing Systems Division  
2016 Clement Avenue, Alameda, California

**Figure 4. Groundwater Elevation Contours - February 2017**



Curb line (Typ.)

Clement Avenue

MW-4

DCE	<0.5
DCA	<0.5
cis-1,2-DCE	<0.5
TCA	<0.5
TCE	<0.5
PCE	<0.5

MW-1

MW-3

Paved

DCE	<0.5
DCA	<0.5
cis-1,2-DCE	8.0
TCA	<0.5
TCE	18
PCE	5.4

DCE	<0.5
DCA	<0.5
cis-1,2-DCE	<0.5
TCA	<0.5
TCE	<0.5
PCE	<0.5

Unpaved

Driveway

Building

DCE	<2.5
DCA	<2.5
cis-1,2-DCE	47
TCA	<2.5
TCE	31
PCE	600

Property boundary

MW-2

Soil excavation area

### EXPLANATION

● Groundwater monitoring well location

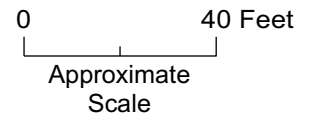
All concentrations reported in micrograms per liter (µg/L), in groundwater. All other 8010 list analytes were below detection limits.

Analyte concentration

DCE	<0.5
DCA	<0.5
cis-1,2-DCE	8.0
TCA	<0.5
TCE	18
PCE	5.4

Analytical parameter

DCE = 1,1-Dichloroethene  
 DCA = 1,1-Dichloroethane  
 PCE = Tetrachloroethene  
 TCA = 1,1,1-Trichloroethane  
 TCE = Trichloroethene  
 VOCs = Volatile organic compounds  
 cis-1,2-DCE = cis-1,2-Dichloroethene



1605fig517Q1.dsf 5/5/17

Base map from Conor Pacific/EFW, Off-Site Groundwater Characterization, August 21, 2002.



Project No. CS1605  
 Cargill Salt Dispensing Systems Division  
 2016 Clement Avenue, Alameda, California  
**Figure 5. VOC Concentrations in Groundwater – February 2017**

Figure 6. Graphical Summary of PCE Concentrations

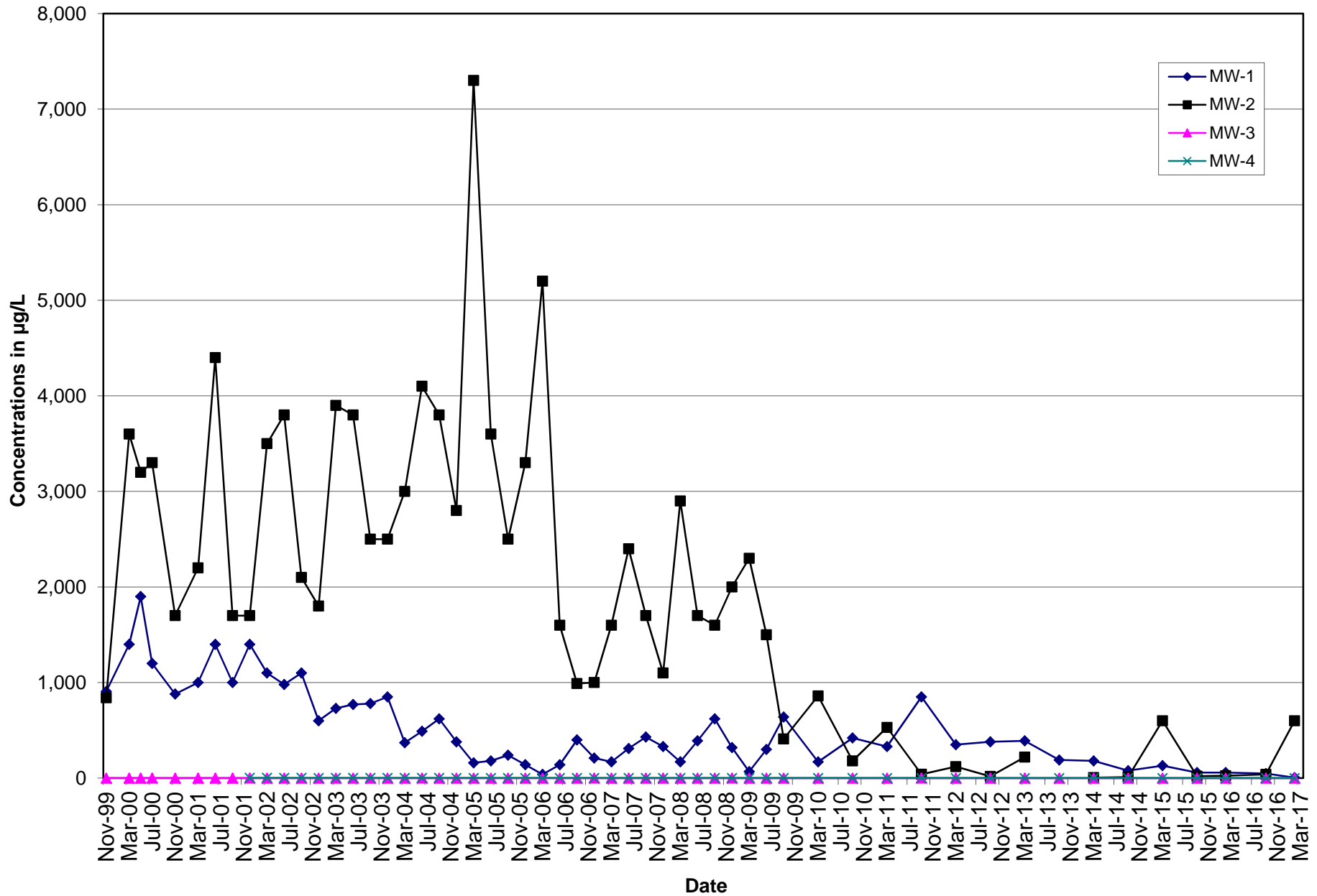
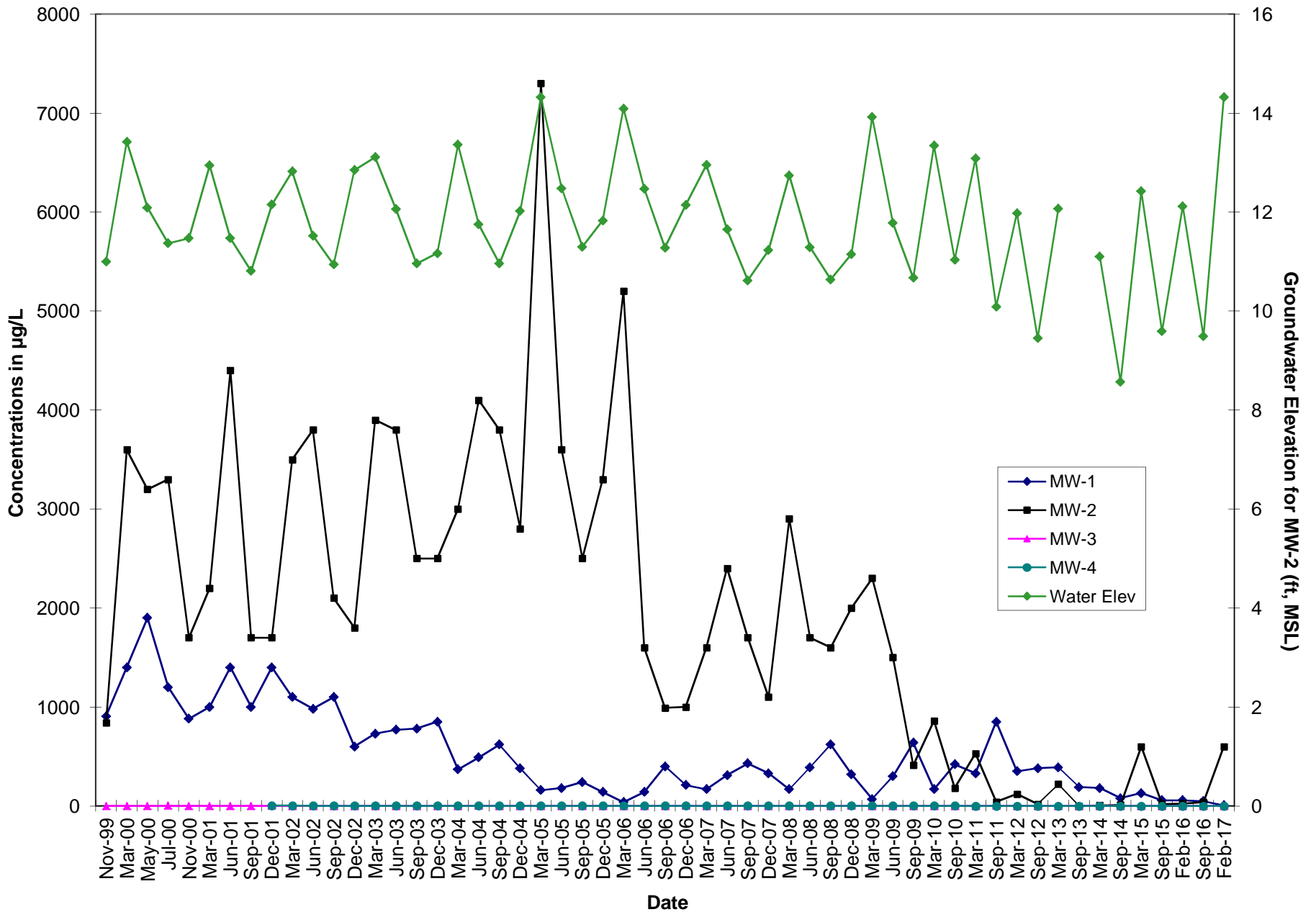


Figure 7. PCE Concentrations vs. Groundwater Elevation



**Appendix A**  
**Field Data Sheets**

## WATER LEVEL FIELD DATA

Cargill Salt  
 Alameda Facility  
 Alameda, California  
 Project No. CS1605

Well ID	Date	Time	Depth to Water (1st Msmt.) (feet)	Depth to Water (2nd Msmt.) (feet)	Comments
MW-1	2-3-17	0813	0.76	0.74	
MW-2	2-3-17	0815	1.90	1.90	water in box
MW-3	2-3-17	0811	1.43	1.43	water in box
MW-4	2-3-17	0818	2.04	2.04	needs new well box water in box

### Data Collection

Field measurements by: Print: <u>Manuel Gallegos</u> Signature: <u>[Signature]</u> Date: <u>2-3-17</u>	Reviewed by: Print: <u>J Byers</u> Signature: <u>[Signature]</u> Date: <u>2-12-17</u>
---	--



**SAMPLE COLLECTION FIELD DATA**

Project No.: CS1605  
 Project Name: Alameda Facility  
 Location: Alameda, CA  
 Client: Cargill Salt

Well ID: MW-1  
 Sample ID: MW-1  
 Start Date: 2-3-17  
 Finish Date: 2-3-17

**WELL INFORMATION**

Casing diameter (in.): 1.0 Depth to water (ft): 0.78 Well depth (ft): 158.3  
 One casing volume (gal.): 0.71 Calculated purge volume (gal.) (3 x casing volume): 2.15  
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$   
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6  
 Floating product thickness (ft): NS Method for checking: Interface probe  Clear bailer

**WELL PURGING (3.785 liters per 1 gallon)**

Date purged: 2-3-17 Start time: 0911 End time: 0942  
 Purging equipment: Submersible pump  Bladder pump  Peristaltic pump   
 PVC bailer  Teflon bailer  Other   
 Purge rate (lpm): 0.25 Well yield (H/L): High  
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (Liters)	pH (units)	EC (mS/cm)	T (°C)	Color (Visual)	Turbidity (NTU)
<u>0922</u>	<u>2.6</u>	<u>6.46</u>	<u>753</u>	<u>15.4</u>	<u>Cloudy</u>	<u>96.6</u>
<u>0931</u>	<u>5.2</u>	<u>6.45</u>	<u>942</u>	<u>15.4</u>	<u>Clear</u>	<u>15.8</u>
<u>0942</u>	<u>7.8</u>	<u>6.46</u>	<u>994</u>	<u>15.4</u>	<u>Clear</u>	<u>10.1</u>

Total Purged (Liters): 7.8

**WELL SAMPLING**

Date sampled: 2/3/17 Start time: 0943 End time: 0945  
 Depth to water (ft) before sampling: 8.18  
 Sampling equipment: Peristaltic pump  Bladder pump  Teflon bailer   
 PVC bailer  Other

Weather conditions: cloudy, sunny Ambient temperature (° F): 58  
 Well condition/Remarks: All samples taken

Meter calibration: EC See MW-4 pH    
 Temperature   Turbidity  

Purged and sampled by (print): Manuel Gallegos  
 Signature: [Signature] Reviewed by: [Signature]

**SAMPLE COLLECTION FIELD DATA**

Project No.: CS1605  
 Project Name: Alameda Facility  
 Location: Alameda, CA  
 Client: Cargill Salt

Well ID: MW-2  
 Sample ID: MW-2  
 Start Date: 2-3-17  
 Finish Date: 2-3-17

**WELL INFORMATION**

Casing diameter (in.): 1.0 Depth to water (ft): 1.90 Well depth (ft): 17.5  
 One casing volume (gal.): 0.63 Calculated purge volume (gal.) (3 x casing volume): 1.91  
 $One\ casing\ volume = \pi \times [casing\ radius\ (in.) \times 1\ ft/12\ in.]^2 \times [well\ depth\ (ft) - depth\ to\ water\ (ft)] \times 7.48\ gal/ft^3$   
 Gallons per linear ft for casing diameter of: 1" = 0.041 2" = 0.16 4" = 0.65 5" = 1.0 6" = 1.5 8" = 2.6  
 Floating product thickness (ft): 1.60 Method for checking: Interface probe  Clear bailer

**WELL PURGING (3.785 liters per 1 gallon)**

Date purged: 2-3-17 Start time: 1054 End time: 1118  
 Purging equipment: Submersible pump  Bladder pump  Peristaltic pump   
 PVC bailer  Teflon bailer  Other   
 Purge rate (lpm): 0.31 Well yield (H/L): High.  
 Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (Liters)	pH (units)	EC (mS/cm)	T (° C)	Color (Visual)	Turbidity (NTU)
<u>1102</u>	<u>2.3</u>	<u>6.44</u>	<u>965</u>	<u>15.3</u>	<u>Clear</u>	<u>7.4</u>
<u>1110</u>	<u>4.4</u>	<u>6.48</u>	<u>542</u>	<u>15.5</u>	<u>Clear</u>	<u>8.0</u>
<u>1118</u>	<u>6.9</u>	<u>6.48</u>	<u>791</u>	<u>15.4</u>	<u>Clear</u>	<u>7.1</u>

Total Purged (Liters): 6.9

**WELL SAMPLING**

Date sampled: 2-3-17 Start time: ~~1119~~ 1119 End time: 1121  
 Depth to water (ft) before sampling: 4.57  
 Sampling equipment: Peristaltic pump  Bladder pump  Teflon bailer   
 PVC bailer  Other

Weather conditions: Rain Ambient temperature (° F): 58

Well condition/Remarks: tree roots coming thru casing line.  
All samples taken

Meter calibration: EC see m-4 pH    
 Temperature   Turbidity  

Purged and sampled by (print): Manuel Gallegos  
 Signature: [Signature]

Reviewed by: [Signature]





## **Appendix B**

### **Groundwater Velocity Calculations**

APPENDIX B  
GROUNDWATER VELOCITY CALCULATIONS

FOR CARGILL ALAMEDA SITE

GROUNDWATER VELOCITY FORMULA

$V = Ki/n$  where:

$V$  = average linear groundwater velocity       $i$  = hydraulic gradient  
 $K$  = hydraulic conductivity                       $n$  = effective porosity

PARAMETERS

Range of hydraulic conductivity values (K) from slug tests:

Material	Well	K (cm/sec)
Silty sand (SM) and Clayey sand (SC)	MW-1	0.00002
Silty sand (SM) and Clayey sand (SC)	MW-2	0.00002
Silty sand (SM) and Clayey sand (SC)	MW-3	0.000003

Highest measured K = 0.00002

Porosity (n) = 33% (from laboratory analysis of boring B21 soil sample)

Hydraulic gradient (i) calculated from groundwater contours:

2/3/17                      0.016

UNIT CONVERSIONS

1 day = 86,400 sec                      1 cm/sec = 2,834.65 ft/day  
 1 foot = 30.48 cm                      1 cm/sec = 1,034,645.67 ft/yr

CALCULATED VELOCITIES

Measurement Event	Flow Direction	K (cm/sec)	i (ft/ft)	n	V (ft/yr)
2/3/17	NE	0.00002	0.016	0.33	1

Calculations and assumptions prepared by:

*Mark C. Wheeler*

Date: 5/10/17

## **Appendix C**

### **Certified Analytical Reports and Chain-of-Custody Documentation**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

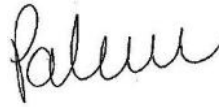
## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Pleasanton  
1220 Quarry Lane  
Pleasanton, CA 94566  
Tel: (925)484-1919

TestAmerica Job ID: 720-77483-1  
Client Project/Site: Alameda Facility CS 1605

For:  
Crawford Consulting Inc  
4 North First Street Suite 650  
San Jose, California 95113-1326

Attn: Ms. Dana Johnston



Authorized for release by:  
2/8/2017 10:14:37 AM

Paloma Duong, Project Manager I  
(925)484-1919  
[paloma.duong@testamericainc.com](mailto:paloma.duong@testamericainc.com)



### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

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**Job ID: 720-77483-1**

---

**Laboratory: TestAmerica Pleasanton**

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**Narrative**

---

**Job Narrative**  
**720-77483-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 2/3/2017 12:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 7.1° C.

**GC/MS VOA**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**VOA Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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# Detection Summary

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Client Sample ID: MW-1

## Lab Sample ID: 720-77483-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.0		0.50		ug/L			1	8260B	Total/NA
Tetrachloroethene	5.4		0.50		ug/L			1	8260B	Total/NA
Trichloroethene	18		0.50		ug/L			1	8260B	Total/NA

## Client Sample ID: MW-2

## Lab Sample ID: 720-77483-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	47		2.5		ug/L			5	8260B	Total/NA
Tetrachloroethene	600		2.5		ug/L			5	8260B	Total/NA
Trichloroethene	31		2.5		ug/L			5	8260B	Total/NA

## Client Sample ID: MW-3

## Lab Sample ID: 720-77483-3

No Detections.

## Client Sample ID: MW-4

## Lab Sample ID: 720-77483-4

No Detections.

## Client Sample ID: DUP-1

## Lab Sample ID: 720-77483-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	59		2.5		ug/L			5	8260B	Total/NA
Tetrachloroethene	720		2.5		ug/L			5	8260B	Total/NA
Trichloroethene	36		2.5		ug/L			5	8260B	Total/NA

## Client Sample ID: TB-1

## Lab Sample ID: 720-77483-6

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

# Client Sample Results

Client: Crawford Consulting Inc  
 Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

**Client Sample ID: MW-1**  
**Date Collected: 02/03/17 09:43**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-1**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			02/05/17 09:30	1
Bromoform	ND		1.0		ug/L			02/05/17 09:30	1
Bromomethane	ND		0.50		ug/L			02/05/17 09:30	1
Carbon tetrachloride	ND		0.50		ug/L			02/05/17 09:30	1
Chlorobenzene	ND		0.50		ug/L			02/05/17 09:30	1
Chloroethane	ND		1.0		ug/L			02/05/17 09:30	1
Chloroform	ND		0.50		ug/L			02/05/17 09:30	1
Chloromethane	ND		0.50		ug/L			02/05/17 09:30	1
Chlorodibromomethane	ND		0.50		ug/L			02/05/17 09:30	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/05/17 09:30	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/05/17 09:30	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/05/17 09:30	1
EDB	ND		0.50		ug/L			02/05/17 09:30	1
Dichlorodifluoromethane	ND		1.0		ug/L			02/05/17 09:30	1
1,1-Dichloroethane	ND		0.50		ug/L			02/05/17 09:30	1
1,2-Dichloroethane	ND		0.50		ug/L			02/05/17 09:30	1
1,1-Dichloroethene	ND		0.50		ug/L			02/05/17 09:30	1
<b>cis-1,2-Dichloroethene</b>	<b>8.0</b>		0.50		ug/L			02/05/17 09:30	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/05/17 09:30	1
1,2-Dichloropropane	ND		0.50		ug/L			02/05/17 09:30	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/05/17 09:30	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/05/17 09:30	1
Methylene Chloride	ND		2.0		ug/L			02/05/17 09:30	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/05/17 09:30	1
<b>Tetrachloroethene</b>	<b>5.4</b>		0.50		ug/L			02/05/17 09:30	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/05/17 09:30	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/05/17 09:30	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/05/17 09:30	1
<b>Trichloroethene</b>	<b>18</b>		0.50		ug/L			02/05/17 09:30	1
Trichlorofluoromethane	ND		0.50		ug/L			02/05/17 09:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			02/05/17 09:30	1
Vinyl chloride	ND		0.50		ug/L			02/05/17 09:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	114		80 - 128		02/05/17 09:30	1
Dibromofluoromethane (Surr)	101		76 - 132		02/05/17 09:30	1
4-Bromofluorobenzene (Surr)	99		80 - 120		02/05/17 09:30	1

TestAmerica Pleasanton

# Client Sample Results

Client: Crawford Consulting Inc  
 Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

**Client Sample ID: MW-2**  
**Date Collected: 02/03/17 11:19**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-2**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		2.5		ug/L			02/06/17 11:02	5
Bromoform	ND		5.0		ug/L			02/06/17 11:02	5
Bromomethane	ND		2.5		ug/L			02/06/17 11:02	5
Carbon tetrachloride	ND		2.5		ug/L			02/06/17 11:02	5
Chlorobenzene	ND		2.5		ug/L			02/06/17 11:02	5
Chloroethane	ND		5.0		ug/L			02/06/17 11:02	5
Chloroform	ND		2.5		ug/L			02/06/17 11:02	5
Chloromethane	ND		2.5		ug/L			02/06/17 11:02	5
Chlorodibromomethane	ND		2.5		ug/L			02/06/17 11:02	5
1,2-Dichlorobenzene	ND		2.5		ug/L			02/06/17 11:02	5
1,3-Dichlorobenzene	ND		2.5		ug/L			02/06/17 11:02	5
1,4-Dichlorobenzene	ND		2.5		ug/L			02/06/17 11:02	5
EDB	ND		2.5		ug/L			02/06/17 11:02	5
Dichlorodifluoromethane	ND		5.0		ug/L			02/06/17 11:02	5
1,1-Dichloroethane	ND		2.5		ug/L			02/06/17 11:02	5
1,2-Dichloroethane	ND		2.5		ug/L			02/06/17 11:02	5
1,1-Dichloroethene	ND		2.5		ug/L			02/06/17 11:02	5
<b>cis-1,2-Dichloroethene</b>	<b>47</b>		2.5		ug/L			02/06/17 11:02	5
trans-1,2-Dichloroethene	ND		2.5		ug/L			02/06/17 11:02	5
1,2-Dichloropropane	ND		2.5		ug/L			02/06/17 11:02	5
cis-1,3-Dichloropropene	ND		2.5		ug/L			02/06/17 11:02	5
trans-1,3-Dichloropropene	ND		2.5		ug/L			02/06/17 11:02	5
Methylene Chloride	ND		10		ug/L			02/06/17 11:02	5
1,1,2,2-Tetrachloroethane	ND		2.5		ug/L			02/06/17 11:02	5
<b>Tetrachloroethene</b>	<b>600</b>		2.5		ug/L			02/06/17 11:02	5
1,2,4-Trichlorobenzene	ND		5.0		ug/L			02/06/17 11:02	5
1,1,1-Trichloroethane	ND		2.5		ug/L			02/06/17 11:02	5
1,1,2-Trichloroethane	ND		2.5		ug/L			02/06/17 11:02	5
<b>Trichloroethene</b>	<b>31</b>		2.5		ug/L			02/06/17 11:02	5
Trichlorofluoromethane	ND		2.5		ug/L			02/06/17 11:02	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10		ug/L			02/06/17 11:02	5
Vinyl chloride	ND		2.5		ug/L			02/06/17 11:02	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	104		80 - 128		02/06/17 11:02	5
<i>Dibromofluoromethane (Surr)</i>	112		76 - 132		02/06/17 11:02	5
<i>4-Bromofluorobenzene (Surr)</i>	93		80 - 120		02/06/17 11:02	5

TestAmerica Pleasanton

# Client Sample Results

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

**Client Sample ID: MW-3**

**Date Collected: 02/03/17 10:37**

**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-3**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			02/06/17 12:21	1
Bromoform	ND		1.0		ug/L			02/06/17 12:21	1
Bromomethane	ND		0.50		ug/L			02/06/17 12:21	1
Carbon tetrachloride	ND		0.50		ug/L			02/06/17 12:21	1
Chlorobenzene	ND		0.50		ug/L			02/06/17 12:21	1
Chloroethane	ND		1.0		ug/L			02/06/17 12:21	1
Chloroform	ND		0.50		ug/L			02/06/17 12:21	1
Chloromethane	ND		0.50		ug/L			02/06/17 12:21	1
Chlorodibromomethane	ND		0.50		ug/L			02/06/17 12:21	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/06/17 12:21	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/06/17 12:21	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/06/17 12:21	1
EDB	ND		0.50		ug/L			02/06/17 12:21	1
Dichlorodifluoromethane	ND		1.0		ug/L			02/06/17 12:21	1
1,1-Dichloroethane	ND		0.50		ug/L			02/06/17 12:21	1
1,2-Dichloroethane	ND		0.50		ug/L			02/06/17 12:21	1
1,1-Dichloroethene	ND		0.50		ug/L			02/06/17 12:21	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 12:21	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 12:21	1
1,2-Dichloropropane	ND		0.50		ug/L			02/06/17 12:21	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 12:21	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 12:21	1
Methylene Chloride	ND		2.0		ug/L			02/06/17 12:21	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/06/17 12:21	1
Tetrachloroethene	ND		0.50		ug/L			02/06/17 12:21	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/06/17 12:21	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/06/17 12:21	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/06/17 12:21	1
Trichloroethene	ND		0.50		ug/L			02/06/17 12:21	1
Trichlorofluoromethane	ND		0.50		ug/L			02/06/17 12:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			02/06/17 12:21	1
Vinyl chloride	ND		0.50		ug/L			02/06/17 12:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 128		02/06/17 12:21	1
Dibromofluoromethane (Surr)	111		76 - 132		02/06/17 12:21	1
4-Bromofluorobenzene (Surr)	94		80 - 120		02/06/17 12:21	1

TestAmerica Pleasanton

# Client Sample Results

Client: Crawford Consulting Inc  
 Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

**Client Sample ID: MW-4**  
**Date Collected: 02/03/17 09:00**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-4**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			02/06/17 12:47	1
Bromoform	ND		1.0		ug/L			02/06/17 12:47	1
Bromomethane	ND		0.50		ug/L			02/06/17 12:47	1
Carbon tetrachloride	ND		0.50		ug/L			02/06/17 12:47	1
Chlorobenzene	ND		0.50		ug/L			02/06/17 12:47	1
Chloroethane	ND		1.0		ug/L			02/06/17 12:47	1
Chloroform	ND		0.50		ug/L			02/06/17 12:47	1
Chloromethane	ND		0.50		ug/L			02/06/17 12:47	1
Chlorodibromomethane	ND		0.50		ug/L			02/06/17 12:47	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/06/17 12:47	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/06/17 12:47	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/06/17 12:47	1
EDB	ND		0.50		ug/L			02/06/17 12:47	1
Dichlorodifluoromethane	ND		1.0		ug/L			02/06/17 12:47	1
1,1-Dichloroethane	ND		0.50		ug/L			02/06/17 12:47	1
1,2-Dichloroethane	ND		0.50		ug/L			02/06/17 12:47	1
1,1-Dichloroethene	ND		0.50		ug/L			02/06/17 12:47	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 12:47	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 12:47	1
1,2-Dichloropropane	ND		0.50		ug/L			02/06/17 12:47	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 12:47	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 12:47	1
Methylene Chloride	ND		2.0		ug/L			02/06/17 12:47	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/06/17 12:47	1
Tetrachloroethene	ND		0.50		ug/L			02/06/17 12:47	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/06/17 12:47	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/06/17 12:47	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/06/17 12:47	1
Trichloroethene	ND		0.50		ug/L			02/06/17 12:47	1
Trichlorofluoromethane	ND		0.50		ug/L			02/06/17 12:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			02/06/17 12:47	1
Vinyl chloride	ND		0.50		ug/L			02/06/17 12:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 128		02/06/17 12:47	1
Dibromofluoromethane (Surr)	114		76 - 132		02/06/17 12:47	1
4-Bromofluorobenzene (Surr)	93		80 - 120		02/06/17 12:47	1

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# Client Sample Results

Client: Crawford Consulting Inc  
 Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

**Client Sample ID: DUP-1**

**Date Collected: 02/03/17 00:00**

**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-5**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		2.5		ug/L			02/06/17 13:14	5
Bromoform	ND		5.0		ug/L			02/06/17 13:14	5
Bromomethane	ND		2.5		ug/L			02/06/17 13:14	5
Carbon tetrachloride	ND		2.5		ug/L			02/06/17 13:14	5
Chlorobenzene	ND		2.5		ug/L			02/06/17 13:14	5
Chloroethane	ND		5.0		ug/L			02/06/17 13:14	5
Chloroform	ND		2.5		ug/L			02/06/17 13:14	5
Chloromethane	ND		2.5		ug/L			02/06/17 13:14	5
Chlorodibromomethane	ND		2.5		ug/L			02/06/17 13:14	5
1,2-Dichlorobenzene	ND		2.5		ug/L			02/06/17 13:14	5
1,3-Dichlorobenzene	ND		2.5		ug/L			02/06/17 13:14	5
1,4-Dichlorobenzene	ND		2.5		ug/L			02/06/17 13:14	5
EDB	ND		2.5		ug/L			02/06/17 13:14	5
Dichlorodifluoromethane	ND		5.0		ug/L			02/06/17 13:14	5
1,1-Dichloroethane	ND		2.5		ug/L			02/06/17 13:14	5
1,2-Dichloroethane	ND		2.5		ug/L			02/06/17 13:14	5
1,1-Dichloroethene	ND		2.5		ug/L			02/06/17 13:14	5
<b>cis-1,2-Dichloroethene</b>	<b>59</b>		2.5		ug/L			02/06/17 13:14	5
trans-1,2-Dichloroethene	ND		2.5		ug/L			02/06/17 13:14	5
1,2-Dichloropropane	ND		2.5		ug/L			02/06/17 13:14	5
cis-1,3-Dichloropropene	ND		2.5		ug/L			02/06/17 13:14	5
trans-1,3-Dichloropropene	ND		2.5		ug/L			02/06/17 13:14	5
Methylene Chloride	ND		10		ug/L			02/06/17 13:14	5
1,1,2,2-Tetrachloroethane	ND		2.5		ug/L			02/06/17 13:14	5
<b>Tetrachloroethene</b>	<b>720</b>		2.5		ug/L			02/06/17 13:14	5
1,2,4-Trichlorobenzene	ND		5.0		ug/L			02/06/17 13:14	5
1,1,1-Trichloroethane	ND		2.5		ug/L			02/06/17 13:14	5
1,1,2-Trichloroethane	ND		2.5		ug/L			02/06/17 13:14	5
<b>Trichloroethene</b>	<b>36</b>		2.5		ug/L			02/06/17 13:14	5
Trichlorofluoromethane	ND		2.5		ug/L			02/06/17 13:14	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10		ug/L			02/06/17 13:14	5
Vinyl chloride	ND		2.5		ug/L			02/06/17 13:14	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 128		02/06/17 13:14	5
Dibromofluoromethane (Surr)	112		76 - 132		02/06/17 13:14	5
4-Bromofluorobenzene (Surr)	93		80 - 120		02/06/17 13:14	5

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# Client Sample Results

Client: Crawford Consulting Inc  
 Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

**Client Sample ID: TB-1**  
**Date Collected: 02/03/17 00:00**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-6**  
**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			02/06/17 13:40	1
Bromoform	ND		1.0		ug/L			02/06/17 13:40	1
Bromomethane	ND		0.50		ug/L			02/06/17 13:40	1
Carbon tetrachloride	ND		0.50		ug/L			02/06/17 13:40	1
Chlorobenzene	ND		0.50		ug/L			02/06/17 13:40	1
Chloroethane	ND		1.0		ug/L			02/06/17 13:40	1
Chloroform	ND		0.50		ug/L			02/06/17 13:40	1
Chloromethane	ND		0.50		ug/L			02/06/17 13:40	1
Chlorodibromomethane	ND		0.50		ug/L			02/06/17 13:40	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/06/17 13:40	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/06/17 13:40	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/06/17 13:40	1
EDB	ND		0.50		ug/L			02/06/17 13:40	1
Dichlorodifluoromethane	ND		1.0		ug/L			02/06/17 13:40	1
1,1-Dichloroethane	ND		0.50		ug/L			02/06/17 13:40	1
1,2-Dichloroethane	ND		0.50		ug/L			02/06/17 13:40	1
1,1-Dichloroethene	ND		0.50		ug/L			02/06/17 13:40	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 13:40	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 13:40	1
1,2-Dichloropropane	ND		0.50		ug/L			02/06/17 13:40	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 13:40	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 13:40	1
Methylene Chloride	ND		2.0		ug/L			02/06/17 13:40	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/06/17 13:40	1
Tetrachloroethene	ND		0.50		ug/L			02/06/17 13:40	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/06/17 13:40	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/06/17 13:40	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/06/17 13:40	1
Trichloroethene	ND		0.50		ug/L			02/06/17 13:40	1
Trichlorofluoromethane	ND		0.50		ug/L			02/06/17 13:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			02/06/17 13:40	1
Vinyl chloride	ND		0.50		ug/L			02/06/17 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 128		02/06/17 13:40	1
Dibromofluoromethane (Surr)	112		76 - 132		02/06/17 13:40	1
4-Bromofluorobenzene (Surr)	95		80 - 120		02/06/17 13:40	1

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# QC Sample Results

Client: Crawford Consulting Inc  
 Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-386590/3**  
**Matrix: Water**  
**Analysis Batch: 386590**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			02/05/17 08:10	1
Bromoform	ND		1.0		ug/L			02/05/17 08:10	1
Bromomethane	ND		0.50		ug/L			02/05/17 08:10	1
Carbon tetrachloride	ND		0.50		ug/L			02/05/17 08:10	1
Chlorobenzene	ND		0.50		ug/L			02/05/17 08:10	1
Chloroethane	ND		1.0		ug/L			02/05/17 08:10	1
Chloroform	ND		0.50		ug/L			02/05/17 08:10	1
Chloromethane	ND		0.50		ug/L			02/05/17 08:10	1
Chlorodibromomethane	ND		0.50		ug/L			02/05/17 08:10	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/05/17 08:10	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/05/17 08:10	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/05/17 08:10	1
EDB	ND		0.50		ug/L			02/05/17 08:10	1
Dichlorodifluoromethane	ND		1.0		ug/L			02/05/17 08:10	1
1,1-Dichloroethane	ND		0.50		ug/L			02/05/17 08:10	1
1,2-Dichloroethane	ND		0.50		ug/L			02/05/17 08:10	1
1,1-Dichloroethene	ND		0.50		ug/L			02/05/17 08:10	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/05/17 08:10	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/05/17 08:10	1
1,2-Dichloropropane	ND		0.50		ug/L			02/05/17 08:10	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/05/17 08:10	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/05/17 08:10	1
Methylene Chloride	ND		2.0		ug/L			02/05/17 08:10	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/05/17 08:10	1
Tetrachloroethene	ND		0.50		ug/L			02/05/17 08:10	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/05/17 08:10	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/05/17 08:10	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/05/17 08:10	1
Trichloroethene	ND		0.50		ug/L			02/05/17 08:10	1
Trichlorofluoromethane	ND		0.50		ug/L			02/05/17 08:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			02/05/17 08:10	1
Vinyl chloride	ND		0.50		ug/L			02/05/17 08:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	112		80 - 128		02/05/17 08:10	1
Dibromofluoromethane (Surr)	103		76 - 132		02/05/17 08:10	1
4-Bromofluorobenzene (Surr)	102		80 - 120		02/05/17 08:10	1

**Lab Sample ID: LCS 440-386590/4**  
**Matrix: Water**  
**Analysis Batch: 386590**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	25.0	24.2		ug/L		97	70 - 132
Bromoform	25.0	24.8		ug/L		99	60 - 148
Bromomethane	25.0	25.1		ug/L		101	64 - 139
Carbon tetrachloride	25.0	26.8		ug/L		107	60 - 150
Chlorobenzene	25.0	24.3		ug/L		97	70 - 130

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# QC Sample Results

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-386590/4**

**Matrix: Water**

**Analysis Batch: 386590**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroethane	25.0	26.2		ug/L		105	64 - 135
Chloroform	25.0	24.6		ug/L		98	70 - 130
Chloromethane	25.0	25.2		ug/L		101	47 - 140
Chlorodibromomethane	25.0	24.5		ug/L		98	69 - 145
1,2-Dichlorobenzene	25.0	25.3		ug/L		101	70 - 130
1,3-Dichlorobenzene	25.0	24.6		ug/L		98	70 - 130
1,4-Dichlorobenzene	25.0	25.1		ug/L		100	70 - 130
EDB	25.0	24.3		ug/L		97	70 - 130
Dichlorodifluoromethane	25.0	28.8		ug/L		115	29 - 150
1,1-Dichloroethane	25.0	24.7		ug/L		99	64 - 130
1,2-Dichloroethane	25.0	23.9		ug/L		96	57 - 138
1,1-Dichloroethene	25.0	27.4		ug/L		110	70 - 130
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	70 - 133
trans-1,2-Dichloroethene	25.0	25.6		ug/L		102	70 - 130
1,2-Dichloropropane	25.0	24.9		ug/L		100	67 - 130
cis-1,3-Dichloropropene	25.0	24.3		ug/L		97	70 - 133
trans-1,3-Dichloropropene	25.0	24.7		ug/L		99	70 - 132
Methylene Chloride	25.0	25.6		ug/L		102	52 - 130
1,1,2,2-Tetrachloroethane	25.0	24.2		ug/L		97	63 - 130
Tetrachloroethene	25.0	27.7		ug/L		111	70 - 130
1,2,4-Trichlorobenzene	25.0	25.7		ug/L		103	60 - 140
1,1,1-Trichloroethane	25.0	25.6		ug/L		102	70 - 130
1,1,2-Trichloroethane	25.0	25.6		ug/L		102	70 - 130
Trichloroethene	25.0	25.8		ug/L		103	70 - 130
Trichlorofluoromethane	25.0	27.8		ug/L		111	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	28.0		ug/L		112	60 - 140
Vinyl chloride	25.0	26.3		ug/L		105	59 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	115		80 - 128
Dibromofluoromethane (Surr)	98		76 - 132
4-Bromofluorobenzene (Surr)	99		80 - 120

**Lab Sample ID: 720-77483-1 MS**

**Matrix: Water**

**Analysis Batch: 386590**

**Client Sample ID: MW-1**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	ND		25.0	26.1		ug/L		105	70 - 138
Bromoform	ND		25.0	26.1		ug/L		104	59 - 150
Bromomethane	ND		25.0	24.2		ug/L		97	62 - 131
Carbon tetrachloride	ND		25.0	25.0		ug/L		100	60 - 150
Chlorobenzene	ND		25.0	23.9		ug/L		96	70 - 130
Chloroethane	ND		25.0	25.5		ug/L		102	68 - 130
Chloroform	ND		25.0	25.3		ug/L		101	70 - 130
Chloromethane	ND		25.0	26.2		ug/L		105	39 - 144
Chlorodibromomethane	ND		25.0	26.6		ug/L		106	70 - 148

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# QC Sample Results

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 720-77483-1 MS**  
**Matrix: Water**  
**Analysis Batch: 386590**

**Client Sample ID: MW-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	ND		25.0	25.9		ug/L		103	70 - 130
1,3-Dichlorobenzene	ND		25.0	24.9		ug/L		99	70 - 130
1,4-Dichlorobenzene	ND		25.0	24.9		ug/L		100	70 - 130
EDB	ND		25.0	25.7		ug/L		103	70 - 131
Dichlorodifluoromethane	ND		25.0	26.3		ug/L		105	25 - 142
1,1-Dichloroethane	ND		25.0	25.2		ug/L		101	65 - 130
1,2-Dichloroethane	ND		25.0	25.1		ug/L		100	56 - 146
1,1-Dichloroethene	ND		25.0	26.3		ug/L		105	70 - 130
cis-1,2-Dichloroethene	8.0		25.0	33.9		ug/L		104	70 - 130
trans-1,2-Dichloroethene	ND		25.0	25.0		ug/L		100	70 - 130
1,2-Dichloropropane	ND		25.0	26.1		ug/L		104	69 - 130
cis-1,3-Dichloropropene	ND		25.0	25.7		ug/L		103	70 - 133
trans-1,3-Dichloropropene	ND		25.0	26.0		ug/L		104	70 - 138
Methylene Chloride	ND		25.0	26.8		ug/L		107	52 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	25.1		ug/L		101	63 - 130
Tetrachloroethene	5.4		25.0	30.5		ug/L		101	70 - 137
1,2,4-Trichlorobenzene	ND		25.0	25.9		ug/L		104	60 - 140
1,1,1-Trichloroethane	ND		25.0	24.0		ug/L		96	70 - 130
1,1,2-Trichloroethane	ND		25.0	27.4		ug/L		110	70 - 130
Trichloroethene	18		25.0	43.0		ug/L		100	70 - 130
Trichlorofluoromethane	ND		25.0	26.0		ug/L		104	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	26.5		ug/L		106	60 - 140
Vinyl chloride	ND		25.0	24.4		ug/L		97	50 - 137
<b>Surrogate</b>		<b>MS %Recovery</b>	<b>MS Qualifier</b>		<b>Limits</b>				
Toluene-d8 (Surr)		112			80 - 128				
Dibromofluoromethane (Surr)		103			76 - 132				
4-Bromofluorobenzene (Surr)		101			80 - 120				

**Lab Sample ID: 720-77483-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 386590**

**Client Sample ID: MW-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorobromomethane	ND		25.0	25.1		ug/L		100	70 - 138	4	20
Bromoform	ND		25.0	25.4		ug/L		102	59 - 150	3	25
Bromomethane	ND		25.0	25.1		ug/L		100	62 - 131	4	25
Carbon tetrachloride	ND		25.0	24.8		ug/L		99	60 - 150	1	25
Chlorobenzene	ND		25.0	23.4		ug/L		94	70 - 130	2	20
Chloroethane	ND		25.0	25.8		ug/L		103	68 - 130	1	25
Chloroform	ND		25.0	24.6		ug/L		98	70 - 130	3	20
Chloromethane	ND		25.0	25.7		ug/L		103	39 - 144	2	25
Chlorodibromomethane	ND		25.0	25.2		ug/L		101	70 - 148	6	25
1,2-Dichlorobenzene	ND		25.0	24.4		ug/L		98	70 - 130	6	20
1,3-Dichlorobenzene	ND		25.0	24.1		ug/L		96	70 - 130	3	20
1,4-Dichlorobenzene	ND		25.0	24.2		ug/L		97	70 - 130	3	20
EDB	ND		25.0	25.1		ug/L		100	70 - 131	2	25

TestAmerica Pleasanton

# QC Sample Results

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 720-77483-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 386590**

**Client Sample ID: MW-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	ND		25.0	26.8		ug/L		107	25 - 142	2	30
1,1-Dichloroethane	ND		25.0	24.6		ug/L		98	65 - 130	2	20
1,2-Dichloroethane	ND		25.0	25.2		ug/L		101	56 - 146	0	20
1,1-Dichloroethene	ND		25.0	24.0		ug/L		96	70 - 130	9	20
cis-1,2-Dichloroethene	8.0		25.0	32.8		ug/L		99	70 - 130	3	20
trans-1,2-Dichloroethene	ND		25.0	25.2		ug/L		101	70 - 130	1	20
1,2-Dichloropropane	ND		25.0	26.0		ug/L		104	69 - 130	1	20
cis-1,3-Dichloropropene	ND		25.0	24.9		ug/L		100	70 - 133	3	20
trans-1,3-Dichloropropene	ND		25.0	25.1		ug/L		100	70 - 138	3	25
Methylene Chloride	ND		25.0	23.6		ug/L		94	52 - 130	13	20
1,1,1,2-Tetrachloroethane	ND		25.0	24.2		ug/L		97	63 - 130	4	30
Tetrachloroethene	5.4		25.0	30.0		ug/L		98	70 - 137	2	20
1,2,4-Trichlorobenzene	ND		25.0	25.4		ug/L		102	60 - 140	2	20
1,1,1-Trichloroethane	ND		25.0	23.6		ug/L		94	70 - 130	2	20
1,1,2-Trichloroethane	ND		25.0	25.7		ug/L		103	70 - 130	6	25
Trichloroethene	18		25.0	42.5		ug/L		98	70 - 130	1	20
Trichlorofluoromethane	ND		25.0	25.9		ug/L		104	60 - 150	0	25
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	23.3		ug/L		93	60 - 140	13	20
Vinyl chloride	ND		25.0	24.3		ug/L		97	50 - 137	0	30
				<b>MSD</b>	<b>MSD</b>						
<b>Surrogate</b>				<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>		
<i>Toluene-d8 (Surr)</i>				107					80 - 128		
<i>Dibromofluoromethane (Surr)</i>				102					76 - 132		
<i>4-Bromofluorobenzene (Surr)</i>				98					80 - 120		

**Lab Sample ID: MB 440-386634/4**  
**Matrix: Water**  
**Analysis Batch: 386634**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			02/06/17 08:23	1
Bromoform	ND		1.0		ug/L			02/06/17 08:23	1
Bromomethane	ND		0.50		ug/L			02/06/17 08:23	1
Carbon tetrachloride	ND		0.50		ug/L			02/06/17 08:23	1
Chlorobenzene	ND		0.50		ug/L			02/06/17 08:23	1
Chloroethane	ND		1.0		ug/L			02/06/17 08:23	1
Chloroform	ND		0.50		ug/L			02/06/17 08:23	1
Chloromethane	ND		0.50		ug/L			02/06/17 08:23	1
Chlorodibromomethane	ND		0.50		ug/L			02/06/17 08:23	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/06/17 08:23	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/06/17 08:23	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/06/17 08:23	1
EDB	ND		0.50		ug/L			02/06/17 08:23	1
Dichlorodifluoromethane	ND		1.0		ug/L			02/06/17 08:23	1
1,1-Dichloroethane	ND		0.50		ug/L			02/06/17 08:23	1
1,2-Dichloroethane	ND		0.50		ug/L			02/06/17 08:23	1
1,1-Dichloroethene	ND		0.50		ug/L			02/06/17 08:23	1

TestAmerica Pleasanton

# QC Sample Results

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-386634/4**  
**Matrix: Water**  
**Analysis Batch: 386634**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 08:23	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/06/17 08:23	1
1,2-Dichloropropane	ND		0.50		ug/L			02/06/17 08:23	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 08:23	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/06/17 08:23	1
Methylene Chloride	ND		2.0		ug/L			02/06/17 08:23	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/06/17 08:23	1
Tetrachloroethene	ND		0.50		ug/L			02/06/17 08:23	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/06/17 08:23	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/06/17 08:23	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/06/17 08:23	1
Trichloroethene	ND		0.50		ug/L			02/06/17 08:23	1
Trichlorofluoromethane	ND		0.50		ug/L			02/06/17 08:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0		ug/L			02/06/17 08:23	1
Vinyl chloride	ND		0.50		ug/L			02/06/17 08:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128		02/06/17 08:23	1
Dibromofluoromethane (Surr)	113		76 - 132		02/06/17 08:23	1
4-Bromofluorobenzene (Surr)	93		80 - 120		02/06/17 08:23	1

**Lab Sample ID: LCS 440-386634/5**  
**Matrix: Water**  
**Analysis Batch: 386634**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	25.0	28.3		ug/L		113	70 - 132
Bromoform	25.0	29.4		ug/L		117	60 - 148
Bromomethane	25.0	26.5		ug/L		106	64 - 139
Carbon tetrachloride	25.0	32.0		ug/L		128	60 - 150
Chlorobenzene	25.0	24.3		ug/L		97	70 - 130
Chloroethane	25.0	24.1		ug/L		96	64 - 135
Chloroform	25.0	28.9		ug/L		116	70 - 130
Chloromethane	25.0	22.8		ug/L		91	47 - 140
Chlorodibromomethane	25.0	27.6		ug/L		110	69 - 145
1,2-Dichlorobenzene	25.0	26.6		ug/L		107	70 - 130
1,3-Dichlorobenzene	25.0	26.0		ug/L		104	70 - 130
1,4-Dichlorobenzene	25.0	27.1		ug/L		108	70 - 130
EDB	25.0	26.9		ug/L		108	70 - 130
Dichlorodifluoromethane	25.0	26.0		ug/L		104	29 - 150
1,1-Dichloroethane	25.0	26.8		ug/L		107	64 - 130
1,2-Dichloroethane	25.0	31.8		ug/L		127	57 - 138
1,1-Dichloroethene	25.0	25.3		ug/L		101	70 - 130
cis-1,2-Dichloroethene	25.0	26.0		ug/L		104	70 - 133
trans-1,2-Dichloroethene	25.0	26.4		ug/L		106	70 - 130
1,2-Dichloropropane	25.0	25.3		ug/L		101	67 - 130
cis-1,3-Dichloropropene	25.0	24.8		ug/L		99	70 - 133
trans-1,3-Dichloropropene	25.0	25.8		ug/L		103	70 - 132

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# QC Sample Results

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-386634/5**

**Matrix: Water**

**Analysis Batch: 386634**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	25.0	25.7		ug/L		103	52 - 130
1,1,2,2-Tetrachloroethane	25.0	22.9		ug/L		91	63 - 130
Tetrachloroethene	25.0	27.6		ug/L		110	70 - 130
1,2,4-Trichlorobenzene	25.0	28.6		ug/L		114	60 - 140
1,1,1-Trichloroethane	25.0	30.8		ug/L		123	70 - 130
1,1,2-Trichloroethane	25.0	24.9		ug/L		99	70 - 130
Trichloroethene	25.0	28.1		ug/L		113	70 - 130
Trichlorofluoromethane	25.0	33.5		ug/L		134	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	27.9		ug/L		111	60 - 140
Vinyl chloride	25.0	23.5		ug/L		94	59 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 128
Dibromofluoromethane (Surr)	112		76 - 132
4-Bromofluorobenzene (Surr)	91		80 - 120

**Lab Sample ID: 720-77483-2 MS**

**Matrix: Water**

**Analysis Batch: 386634**

**Client Sample ID: MW-2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	ND		125	138		ug/L		110	70 - 138
Bromoform	ND		125	141		ug/L		113	59 - 150
Bromomethane	ND		125	129		ug/L		103	62 - 131
Carbon tetrachloride	ND		125	147		ug/L		118	60 - 150
Chlorobenzene	ND		125	123		ug/L		98	70 - 130
Chloroethane	ND		125	119		ug/L		96	68 - 130
Chloroform	ND		125	133		ug/L		107	70 - 130
Chloromethane	ND		125	113		ug/L		90	39 - 144
Chlorodibromomethane	ND		125	137		ug/L		110	70 - 148
1,2-Dichlorobenzene	ND		125	128		ug/L		103	70 - 130
1,3-Dichlorobenzene	ND		125	130		ug/L		104	70 - 130
1,4-Dichlorobenzene	ND		125	126		ug/L		101	70 - 130
EDB	ND		125	126		ug/L		100	70 - 131
Dichlorodifluoromethane	ND		125	130		ug/L		104	25 - 142
1,1-Dichloroethane	ND		125	124		ug/L		99	65 - 130
1,2-Dichloroethane	ND		125	144		ug/L		116	56 - 146
1,1-Dichloroethene	ND		125	119		ug/L		95	70 - 130
cis-1,2-Dichloroethene	47		125	166		ug/L		95	70 - 130
trans-1,2-Dichloroethene	ND		125	125		ug/L		100	70 - 130
1,2-Dichloropropane	ND		125	124		ug/L		99	69 - 130
cis-1,3-Dichloropropene	ND		125	123		ug/L		99	70 - 133
trans-1,3-Dichloropropene	ND		125	128		ug/L		103	70 - 138
Methylene Chloride	ND		125	120		ug/L		96	52 - 130
1,1,2,2-Tetrachloroethane	ND		125	103		ug/L		83	63 - 130
Tetrachloroethene	600		125	696	4	ug/L		79	70 - 137
1,2,4-Trichlorobenzene	ND		125	140		ug/L		112	60 - 140

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# QC Sample Results

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 720-77483-2 MS**

**Matrix: Water**

**Analysis Batch: 386634**

**Client Sample ID: MW-2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		125	147		ug/L		117	70 - 130
1,1,2-Trichloroethane	ND		125	118		ug/L		95	70 - 130
Trichloroethene	31		125	163		ug/L		105	70 - 130
Trichlorofluoromethane	ND		125	152		ug/L		121	60 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		125	125		ug/L		100	60 - 140
Vinyl chloride	ND		125	118		ug/L		94	50 - 137
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
<i>Toluene-d8 (Surr)</i>	104		80 - 128						
<i>Dibromofluoromethane (Surr)</i>	112		76 - 132						
<i>4-Bromofluorobenzene (Surr)</i>	91		80 - 120						

**Lab Sample ID: 720-77483-2 MSD**

**Matrix: Water**

**Analysis Batch: 386634**

**Client Sample ID: MW-2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorobromomethane	ND		125	132		ug/L		105	70 - 138	5	20
Bromoform	ND		125	137		ug/L		110	59 - 150	3	25
Bromomethane	ND		125	128		ug/L		102	62 - 131	1	25
Carbon tetrachloride	ND		125	150		ug/L		120	60 - 150	2	25
Chlorobenzene	ND		125	123		ug/L		98	70 - 130	0	20
Chloroethane	ND		125	117		ug/L		93	68 - 130	2	25
Chloroform	ND		125	133		ug/L		106	70 - 130	0	20
Chloromethane	ND		125	114		ug/L		91	39 - 144	1	25
Chlorodibromomethane	ND		125	131		ug/L		105	70 - 148	4	25
1,2-Dichlorobenzene	ND		125	130		ug/L		104	70 - 130	1	20
1,3-Dichlorobenzene	ND		125	130		ug/L		104	70 - 130	0	20
1,4-Dichlorobenzene	ND		125	127		ug/L		101	70 - 130	0	20
EDB	ND		125	127		ug/L		102	70 - 131	1	25
Dichlorodifluoromethane	ND		125	137		ug/L		110	25 - 142	5	30
1,1-Dichloroethane	ND		125	124		ug/L		99	65 - 130	0	20
1,2-Dichloroethane	ND		125	141		ug/L		112	56 - 146	3	20
1,1-Dichloroethene	ND		125	117		ug/L		93	70 - 130	2	20
cis-1,2-Dichloroethene	47		125	169		ug/L		97	70 - 130	2	20
trans-1,2-Dichloroethene	ND		125	125		ug/L		100	70 - 130	1	20
1,2-Dichloropropane	ND		125	122		ug/L		97	69 - 130	2	20
cis-1,3-Dichloropropene	ND		125	123		ug/L		99	70 - 133	0	20
trans-1,3-Dichloropropene	ND		125	127		ug/L		101	70 - 138	1	25
Methylene Chloride	ND		125	119		ug/L		95	52 - 130	1	20
1,1,2,2-Tetrachloroethane	ND		125	103		ug/L		83	63 - 130	0	30
Tetrachloroethene	600		125	695	4	ug/L		78	70 - 137	0	20
1,2,4-Trichlorobenzene	ND		125	139		ug/L		111	60 - 140	1	20
1,1,1-Trichloroethane	ND		125	145		ug/L		116	70 - 130	1	20
1,1,2-Trichloroethane	ND		125	120		ug/L		96	70 - 130	1	25
Trichloroethene	31		125	163		ug/L		106	70 - 130	0	20
Trichlorofluoromethane	ND		125	153		ug/L		123	60 - 150	1	25

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# QC Sample Results

Client: Crawford Consulting Inc  
 Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 720-77483-2 MSD**

**Matrix: Water**

**Analysis Batch: 386634**

**Client Sample ID: MW-2**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		125	129		ug/L		103	60 - 140	3	20
Vinyl chloride	ND		125	119		ug/L		95	50 - 137	1	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
Toluene-d8 (Surr)	102		80 - 128								
Dibromofluoromethane (Surr)	109		76 - 132								
4-Bromofluorobenzene (Surr)	92		80 - 120								

# QC Association Summary

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## GC/MS VOA

### Analysis Batch: 386590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-77483-1	MW-1	Total/NA	Water	8260B	
MB 440-386590/3	Method Blank	Total/NA	Water	8260B	
LCS 440-386590/4	Lab Control Sample	Total/NA	Water	8260B	
720-77483-1 MS	MW-1	Total/NA	Water	8260B	
720-77483-1 MSD	MW-1	Total/NA	Water	8260B	

### Analysis Batch: 386634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-77483-2	MW-2	Total/NA	Water	8260B	
720-77483-3	MW-3	Total/NA	Water	8260B	
720-77483-4	MW-4	Total/NA	Water	8260B	
720-77483-5	DUP-1	Total/NA	Water	8260B	
720-77483-6	TB-1	Total/NA	Water	8260B	
MB 440-386634/4	Method Blank	Total/NA	Water	8260B	
LCS 440-386634/5	Lab Control Sample	Total/NA	Water	8260B	
720-77483-2 MS	MW-2	Total/NA	Water	8260B	
720-77483-2 MSD	MW-2	Total/NA	Water	8260B	

# Lab Chronicle

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

**Client Sample ID: MW-1**  
**Date Collected: 02/03/17 09:43**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	386590	02/05/17 09:30	TCN	TAL IRV

**Client Sample ID: MW-2**  
**Date Collected: 02/03/17 11:19**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	386634	02/06/17 11:02	RM	TAL IRV

**Client Sample ID: MW-3**  
**Date Collected: 02/03/17 10:37**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	386634	02/06/17 12:21	RM	TAL IRV

**Client Sample ID: MW-4**  
**Date Collected: 02/03/17 09:00**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	386634	02/06/17 12:47	RM	TAL IRV

**Client Sample ID: DUP-1**  
**Date Collected: 02/03/17 00:00**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	386634	02/06/17 13:14	RM	TAL IRV

**Client Sample ID: TB-1**  
**Date Collected: 02/03/17 00:00**  
**Date Received: 02/03/17 12:30**

**Lab Sample ID: 720-77483-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	386634	02/06/17 13:40	RM	TAL IRV

## Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TestAmerica Pleasanton

# Certification Summary

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

## Laboratory: TestAmerica Pleasanton

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-18

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17 *
Hawaii	State Program	9	N/A	01-29-17 *
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-17 *
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

\* Certification renewal pending - certification considered valid.

TestAmerica Pleasanton

# Method Summary

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

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Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV

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**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



# Sample Summary

Client: Crawford Consulting Inc  
Project/Site: Alameda Facility CS 1605

TestAmerica Job ID: 720-77483-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-77483-1	MW-1	Water	02/03/17 09:43	02/03/17 12:30
720-77483-2	MW-2	Water	02/03/17 11:19	02/03/17 12:30
720-77483-3	MW-3	Water	02/03/17 10:37	02/03/17 12:30
720-77483-4	MW-4	Water	02/03/17 09:00	02/03/17 12:30
720-77483-5	DUP-1	Water	02/03/17 00:00	02/03/17 12:30
720-77483-6	TB-1	Water	02/03/17 00:00	02/03/17 12:30

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Service Request:

Date: 2-3-12

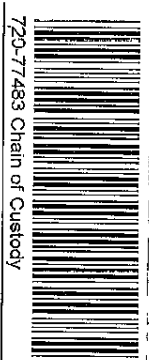
173921

Project Name: Alameda Facility  
 Project Number: CS1605  
 Project Manager: Dana Johnston  
 Company/Address: Crawford Consulting, Inc.  
 4 North Second St, Suite 650  
 San Jose, CA 95113  
 Phone: (408) 287-9934

Sampler's Signature: *[Signature]*

Sample ID	Date	Time	LAB ID	Sample Matrix
MW-1	2-3-12	0943		water
MW-2	2-3-12	1119		water
MW-3	2-3-12	1032		water
MW-4	2-3-12	0900		water
DUP-1	2-3-12			water
TB-1	2-3-12			water

Number of Containers	Volatilic Organics (VOCs) (EPA 8021B)	Pb (7421); As (7060)	Same as Metals	COD, TKN	500 ml plastic H <sub>2</sub> SO <sub>4</sub>	Chloride, Nitrate	500 ml plastic NP	pH, Conductivity	500 ml plastic NP	Total Phenols	2 x 500 ml glass H <sub>2</sub> SO <sub>4</sub>	Volatilic Organics (8010)	3 x 40 ml vial	TPHgBTEX	2 x 40 ml vial HCl	REMARKS
3												X				
3												X				
3												X				
3												X				
3												X				



Relinquished By: *[Signature]*  
 Signature: *[Signature]*  
 Printed Name: *[Name]*  
 Firm: *[Firm]*  
 Date/Time: 2/3/12 12:30

Received By: *[Signature]*  
 Signature: *[Signature]*  
 Printed Name: *[Name]*  
 Firm: *[Firm]*  
 Date/Time: 2-3-12 12:30

Special Instructions/Comments:  
 Please report MRLs only  
 Please provide EDF for Geotracker. Global ID is SL0600177511

TURNAROUND REQUIREMENTS  
 24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
 Standard (5 working days)  
 Provide Vendor Preliminary Results  
 Provide pdf Results

REPORT REQUIREMENTS  
 I. Routine Report  
 II. Report (includes DUP, MS MSD, as required, may be changed as samples)  
 III. Data Validation Report (includes All Test Data) RVOCS  
 (ADD REQ/TRACE)

INVOICE INFORMATION  
 P.O.# \_\_\_\_\_  
 Bill to: \_\_\_\_\_

SAMPLE RECEIPT  
 Shipping Via: \_\_\_\_\_  
 Shipping #: \_\_\_\_\_  
 Condition: \_\_\_\_\_



**TestAmerica Pleasanton**  
 1220 Quarry Lane  
 Pleasanton, CA 94566  
 Phone (925) 484-1919 Fax (925) 600-3002

### Chain of Custody Record



**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Lab Pw: Duong, Paloma R		Carrier Tracking No(s):				
Client Contact: Shipping/Receiving		E-Mail: paloma.duong@testamericainc.com		State of Origin: California				
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - California		COC No: 720-32390.1				
Address: 17461 Derian Ave, Suite-100, Irvine		Due Date Requested: 2/9/2017		Page: Page 1 of 1				
City: Irvine		TAT Requested (days):		Job #: 720-77483-1				
State, Zip: CA, 92614-5817		PO #:		Preservation Codes: M - Hexane N - None O - AshdO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Z - other (Specify)				
Phone: 949-261-1022(Tel) 949-260-3297(Fax)		WO #:		Other:				
Email:		Project #: 72000077						
Site: Alameda Facility CS 1605		SSOW#:						
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, On-site)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:
MW-1 (720-77483-1)	2/3/17	09:43 Pacific	Water	Water	X	X	3	
MW-2 (720-77483-2)	2/3/17	11:19 Pacific	Water	Water	X	X	3	
MW-3 (720-77483-3)	2/3/17	10:37 Pacific	Water	Water	X	X	3	
MW-4 (720-77483-4)	2/3/17	09:00 Pacific	Water	Water	X	X	3	
DUP-1 (720-77483-5)	2/3/17	Pacific	Water	Water	X	X	3	
TB-1 (720-77483-6)	2/3/17	Pacific	Water	Water	X	X	3	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/less/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>								
<b>Possible Hazard Identification</b>								
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions (QC Requirements):								
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2								
Empty Kit Relinquished by:			Date:			Method of Shipment:		
Relinquished by: [Signature]			Date/Time: 2/3/17 16:25			Received by: [Signature] Company		
Relinquished by:			Date/Time:			Received by: [Signature] Company		
Relinquished by:			Date/Time:			Received by: [Signature] Company		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks: 2.0 / 1.8		



# Login Sample Receipt Checklist

Client: Crawford Consulting Inc

Job Number: 720-77483-1

**Login Number: 77483**  
**List Number: 1**  
**Creator: Arauz, Dennis**

**List Source: TestAmerica Pleasanton**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: Crawford Consulting Inc

Job Number: 720-77483-1

**Login Number: 77483**  
**List Number: 2**  
**Creator: Salas, Margarita**

**List Source: TestAmerica Irvine**  
**List Creation: 02/04/17 04:12 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



