Groundwater Monitoring Results
First Semi-Annual 2006 Monitoring Period
Cargill Salt – Alameda Facility
Alameda, California

CRAWFORD
CONSULTING
INC.

Cargill

November 8, 2006

Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RE: Groundwater Monitoring Results, First Semi-Annual 2006 Monitoring Period, Cargill Salt – Alameda Facility, Alameda, California, SLIC Case No. RO0002480

Dear Mr. Wickham,

The attached report presents the groundwater monitoring results for the First Semi-Annual 2006 Monitoring Period for the Cargill Salt Alameda facility. This report presents the results of groundwater monitoring data collected during the first and second quarters of 2006. For each quarterly period, groundwater levels in the site monitoring wells were measured, groundwater samples were collected and analyzed, and the groundwater flow direction and gradient were determined.

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,

Teri Peterson
Environmental Manager

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Cargill Salt – Alameda Facility
Alameda, California

Prepared for:

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Project No. CS1605
November 8, 2006

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(presented in electronic format only)

Electronic File

Entire report presented in electronic file format (pdf) on CD-ROM inside back cover.

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. Reporting is now being performed on a semi-annual basis.

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.

1.1 Background Information

A description of the Site, a summary of the development of characterization and monitoring programs for the Site, and a summary of the groundwater monitoring activities for the first and second quarters of 2006 are presented in this section.

1.1.1 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.

1.1.2 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.

1.1.3 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.

1.2 Reporting Period Activities

This report presents the results of groundwater monitoring data collected during the first and second quarters of 2006. For each quarterly period, 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 quarterly monitoring schedule for the first semi-annual 2006 monitoring period is shown below.

Quarter of 2006	Field Dates
First	March 10, 2006
Second	June 9, 2006

Supervision of the quarterly monitoring events was conducted for Cargill Salt by Crawford. Groundwater level measurements and collection of groundwater samples were conducted by Field Solutions, Inc. The groundwater samples for the first through second quarters of 2006 were analyzed by STL Chromalab, Inc., a state-certified laboratory in Pleasanton, California.

2 Groundwater Flow Analysis

Groundwater levels were measured quarterly and groundwater contour maps were prepared for the first through second quarter 2006 reporting period.

2.1 Water-Level Measurement

Water levels in groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-4) were measured each quarter, before any of the groundwater monitoring wells were purged for sampling for the quarterly 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 second quarter of 2006 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.

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.

Groundwater levels in the on-site monitoring wells (MW-1, MW-2, and MW-3) showed a similar seasonal pattern in the first semi-annual period of 2006 as in the previous six years (see Figure 3). Groundwater levels rose across the Site between the fourth quarter 2005 and first quarter 2006 measurements, reflecting winter-season recharge. Groundwater levels fell between the first and second quarter 2006 measurements, reflecting dissipation of winter-season discharge.

2.2 Groundwater Flow Direction and Gradient

Groundwater contour maps for the first and second quarters of 2006 based on the March and June, 2006 water-level data are shown on Figures 4 and 5.

The groundwater flow direction determined for the first and second quarters of 2006 was to the northeast, consistent with the groundwater flow direction determined previously for the Site. The horizontal hydraulic gradients measured for the first and second quarters of 2006 were 0.030 and 0.016, respectively.

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 and second quarters of 2006 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 and second quarters 2006 groundwater contour maps, groundwater flow velocities beneath the Site are calculated to range from 1 to 2 feet per year (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 March 10, 2006 and June 9, 2006 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® dedicated check valves were installed on the tubing intakes to prevent back-flow of water into the well. A short length of dedicated Viton® 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® pump head discharge tubing.

The groundwater samples were analyzed for VOCs using U.S. Environmental Protection Agency (USEPA) Method 8021B. Results for all Method 8010 analytes were reported. The groundwater samples for first through second quarter 2006 were delivered with appropriate chain-of-custody documentation to STL Chromalab, 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 through second quarter 2006 sampling program for the Site. A field duplicate is used to assess sampling and analytical precision. The duplicate is collected at a selected well (MW-2 [first and second quarters 2006]) 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:

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

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 through second quarter 2006 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 an 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:

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

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

First Quarter 2006 Field QC Results

One field duplicate (DUP-1) was analyzed as part of the first quarter 2006 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 8021B (8010 list). Table 2 summarizes the calculated RPDs for MW-2 and MW-2 duplicate (DUP-1). Of the two parameters for which RPDs could be calculated (see Table 2), both parameters (TCE and PCE) exhibit low RPD values (i.e., less than 10%) indicative of good precision.

Second Quarter 2006 Field QC Results

One field duplicate (DUP-1) was analyzed as part of the second quarter 2006 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 8021B (8010 list). Table 2 summarizes the calculated RPDs for MW-2 and MW-2 duplicate (DUP-1). The one parameter (PCE) for which the RPD could be calculated (see Table 2) exhibits a low RPD value (i.e., less than 10%) indicative of good precision.

First through Second Quarter 2006 Laboratory QC Results

A review of the first through second quarter 2006 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) no matrix spike or duplicate matrix spike recoveries were outside of the laboratory's control limits; and (3) RPD values for the matrix spikes and duplicate matrix spikes indicate a high overall degree of analytical precision. 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 of VOC analyses for each quarter for 2000 through second quarter 2006 are summarized in Table 3, which also shows the VOC results for the initial sampling event for monitoring wells MW-1, MW-2, and MW-3 in November 1999. The results for the first and second quarter 2006 monitoring events are also shown on Figure 7.

The following VOCs were detected in Site groundwater samples from the first and second quarter 2006 monitoring events: PCE, its breakdown products TCE, 1,1-dichloroethene (DCE), and 1,2-dichloroethane (DCA), 1,1,1-trichloroethane (TCA), and chloroform. TCA was only detected in the duplicate samples from MW-2, as shown on Table 2 and as footnoted on Figure 6.

For the first and second quarters of 2006, the concentrations of PCE detected were 39 and 140 µg/L in monitoring well MW-1, 5,200 and 1,600 in MW-2, and 0.79 and 0.64 µg/L in MW-4. PCE was not detected in monitoring well MW-3.

The concentrations of TCE detected were 3.4 and 22 µg/L in monitoring well MW-1. For monitoring well MW-2, TCE was detected at 59 µg/L for the first quarter of 2006. For the second quarter 2006 results for MW-2, TCE was not detected in the primary sample but was detected at 9.7 µg/L in the duplicate sample. TCE was not detected in MW-3 or MW-4.

DCE was detected in monitoring well MW-3 at 0.86 and 4.3 µg/L for the first and second quarter 2006 events. For MW-2, DCE was not detected in the primary sample but was detected in the duplicate sample at 0.76 µg/L for the first quarter 2006 event. For the second quarter 2006 event, DCE was not detected in the either the primary or duplicate sample from MW-2. DCE was not detected in MW-1 or MW-4.

TCA was detected at 7.0 µg/L in the duplicate sample but was not detected in the primary sample from MW-2 in the first quarter 2006 event. For the second quarter 2006 event, TCA was detected at 0.90 µg/L in the duplicate sample but was not detected in the primary sample from MW-2. TCA was not detected in MW-1, MW-3, or MW-4.

DCA was reported for the second quarter 2006 sample from MW-3 at a concentration of 0.50 µg/L, but was not detected in any other samples this reporting period.

Chloroform was reported at 1.4 µg/L for MW-1 for the first quarter 2006 event, but was not detected in any other samples this reporting period.

It should be noted that the laboratory was able to obtain lower reporting limits for the duplicate samples than for the primary samples collected from MW-2 during both monitoring events because different dilutions were used for the primary vs. duplicate samples. Detection of DCE, TCA, and TCE in the duplicate samples but not in the primary samples is due to the difference in reporting limits obtained by the laboratory. The laboratory has indicated they will try to obtain more consistent reporting limits for future monitoring events.

3.3 Discussion

The results for the first through second quarter 2006 quarterly monitoring events are generally similar to the results reported for the years 2000 through 2005 quarterly monitoring programs (see Figure 7). Variations in VOC concentrations at monitoring well MW-2, the well with the highest reported PCE concentrations at the site, 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 8). The variations in VOC concentrations sometimes lag one quarter behind the variations in groundwater elevation.

The concentration of PCE reported for groundwater monitoring well MW-2 for the June 2006 sampling event was the lowest PCE concentration reported for the well since the initial sampling event in November 1999. The PCE concentration reported for MW-2 for June 2006 may be an indication that the phytoremediation project is beginning to be effective at reducing VOC concentrations in groundwater at the site. However, it may be premature to correlate this PCE concentration to the

effectiveness of the phytoremediation project as the trees have only been growing for one year (see Section 4). Continued monitoring will be required before a definitive correlation can be made.

As shown on Figure 7, the concentrations of PCE reported for groundwater monitoring well MW-1 show an overall decreasing trend for the last several years.

4 Phytoremediation Project Status Update

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).

A tree monitoring and maintenance program is being conducted by a landscaping contractor. This program involves monthly inspection of the trees, inspection and maintenance of the drip irrigation system, and weed control.

The end of the first semi-annual monitoring period of 2006 marks the end of the first year of the phytoremediation project. The trees were 4-ft-tall, bare-root poles with no foliage when planted in June 2005. During the first year of growth, the trees developed foliage and grew several feet in height.

It is expected that it will take two to three years after planting for the trees and root systems to become well established and for the trees to start having a significant effect on VOC concentrations in groundwater at the Site. Tree growth and VOC concentrations will be monitored and evaluated to determine the effectiveness of the phytoremediation project.

Professional Certification

Groundwater Monitoring Results
First Semi-Annual 2006 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

References

Alameda County Environmental Health Services, 1999. Letter to Cargill Salt: Groundwater Monitoring Well Installation at 2016 Clement Avenue, Alameda, CA, May 7, 1999.

Conor Pacific/EFW, 2001. Workplan for Off-Site Characterization, Cargill Salt Alameda Facility, June 18, 2001.

_____, 2002. Off-Site Groundwater Characterization, Cargill Salt – Alameda Facility, Alameda, California, August 21, 2002.

Crawford Consulting, Inc., 1999. Workplan for Groundwater Characterization and Monitoring Well Installation, 2016 Clement Avenue, Alameda, California, July 7, 1999.

_____, 2001. Groundwater Monitoring Results, First through Fourth Quarter 2000, Cargill Salt – Alameda Facility, Alameda, California, April 11, 2001.

_____, 2002. Groundwater Monitoring Results, First through Fourth Quarter 2001, Cargill Salt – Alameda Facility, Alameda, California, August 14, 2002.

_____, 2003. Groundwater Monitoring Results, First through Fourth Quarter 2002, Cargill Salt – Alameda Facility, Alameda, California, August 13, 2003.

_____, 2004. Groundwater Monitoring Results, First through Fourth Quarter 2003, Cargill Salt – Alameda Facility, Alameda, California, February 27, 2004.

_____, 2005. Groundwater Monitoring Results, First through Fourth Quarter 2004, Cargill Salt – Alameda Facility, Alameda, California, November 7, 2005.

_____, 2006. Groundwater Monitoring Results, First through Fourth Quarter 2005, Cargill Salt – Alameda Facility, Alameda, California, October 20, 2006.

Crawford Consulting, Inc. and Conor Pacific/EFW, 2000. Groundwater Characterization and Monitoring Well Installation, Cargill Salt – Alameda Facility, Alameda, California, January 31, 2000.

Groundworks Environmental, Inc. (Groundworks), 1993. Results of Soil Sampling and Workplan for Remedial Activities, Alameda facility, October 19, 1993.

_____, 1995. Soil and Groundwater Investigations and Remedial Activities, July 1993 – September 1994, Cargill Salt – Alameda Facility, Alameda, California, July 31, 1995.

Hickenbottom, K. S., and Muir, K.S., 1988. Geohydrology and Groundwater-Quality Overview of the East Bay Plain Area, Alameda County, California, 205 (j) Report, prepared for the California Regional Water Quality Control Board, San Francisco Bay Region, by the Alameda County Flood Control and Water Conservation District, June 1988.

Green, C. and Hoffnagle, A., 2004, Phytoremediation Field Studies Database for Chlorinated Solvents, Pesticides, Explosives, and Metals, Prepared for U.S. Environmental Protection Agency Office of Superfund Remediation and Technology Innovation Washington, DC, August 2004.

U.S. Environmental Protection Agency, 2001, Brownfields Technology Primer: Selecting and Using Phytoremediation for Site Cleanup, U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response Technology Innovation Office Washington, DC 20460 EPA 542-R-01-006, July 2001.

Limitations

This report and the evaluations presented herein have been prepared in accordance with generally accepted professional standards and is 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-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

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	9/16/2005	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-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-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

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	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

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

Analysis	First Quarter 2006 Well MW-2 Results	First Quarter 2006 Duplicate (DUP-1) Results	First Quarter 2006 RPD[1] (%)	Second Quarter 2006 Well MW-2 Results	Second Quarter 2006 Duplicate (DUP-1) Results	Second Quarter 2006 RPD[1] (%)
Organic Compounds (µg/L)						
1,1-Dichloroethene (DCE)	<25	0.76	NM[2]	<20	<0.5	NM
1,1,1-Trichloroethane (TCA)	<25	7.0	NM	<20	0.90	NM
Trichloroethene (TCE)	59	60	1.7	<20	9.7	NM
Tetrachloroethene (PCE)	5,200	5,600	7.4	1,600	1,500	6.4

[1] RPD = relative percent difference

[2] NM = not meaningful; RPD cannot be accurately calculated where one or both values are below the method reporting limit.

All other 8010 analytes not detected (by 8021B).

Table 3. Summary of Groundwater Monitoring Well Data
(results measured in µg/L)

Well No.	MW-1																										
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[1]
DCE[2]	<50.0	**13**	<10	**15**	**14**	<13	**14**	**15**	<13	<13	<13	<13	<13	<10	**12**	**5.2**	**8.4**	<5.0	**5.8**	**6.6**	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	6
CFC 113[3]	na[4]	**1.4**	<10	<10	<8.3	<50	<50	<50	<50	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	ne[5]
DCA[6]	<50.0	**0.8**	<10	<10	<4.2	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	5
Chloroform	<50.0	**0.6***	<10	<10	<8.3	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<10	<4.0	**1.4**	<4.0	ne
TCA[7]	<50.0	**1.6**	<10	<10	<4.2	<13	<13	<13	<13	<13	<13	<13	<13	<10	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<2.0	<0.5	<2.0	200
TCE[8]	**178**	**150**	**190**	**170**	**130**	**180**	**250**	**210**	**190**	**160**	**140**	**190**	**68**	**97**	**90**	**110**	**130**	**53**	**72**	**81**	**39**	**15**	**23**	**34**	**16**	**3.4**	**22**	5
PCE[9]	**906**	**1,400**	**1,900**	**1,200**	**880**	**1,000**	**1,400**	**1,000**	**1,400**	**1,100**	**980**	**1,100**	**600**	**730**	**770**	**780**	**850**	**370**	**490**	**620**	**380**	**160**	**180**	**240**	**140**	**39**	**140**	5
Other analytes[10]	nd[11]	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:

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

[2] DCE = 1,1-Dichloroethene

[3] CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane

[4] na = not analyzed

[5] ne = not established or none applicable

[6] DCA = 1,1-Dichloroethane

[7] TCA = 1,1,1-Trichloroethane

[8] TCE = Trichloroethene

[9] PCE = Tetrachloroethene

[10] All other Method 8010/8021B analytes

[11] nd = not detected above laboratory reporting limit

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

Table 3. Summary of Groundwater Monitoring Well Data
(results measured in µg/L)

Well No.	MW-2																										
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	12/6/05	3/10/06	6/9/06	MCL[1]
DCE[2]	<50.0	<0.5	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	6
CFC 113[3]	na	<0.5	<25	<25	<17	<100	<100	<100	<100	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	ne[5]
DCA[6]	<50.0	<0.5	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	5
Chloroform	<50.0	<0.5	<25	<25	<17	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<40	<50	<50	<40	ne
TCA[7]	<50.0	**5.0**	<25	<25	<8.3	<25	<25	<25	<25	<25	<25	<25	<25	<20	<20	<20	<20	<20	<25	<25	<20	<50	<25	<20	<25	<25	<20	200
TCE[8]	<50	**29**	**53**	<25	**20**	**40**	**78**	<25	<25	**49**	**52**	**32**	<25	**58**	**41**	**28**	**25**	**39**	**49**	**37**	**30**	**78**	**43**	**29**	**45**	**59**	<20	5
PCE[9]	**840**	**3,600**	**3,200**	**3,300**	**1,700**	**2,200**	**4,400**	**1,700**	**1,700**	**3,500**	**3,800**	**2,100**	**1,800**	**3,900**	**3,800**	**2,500**	**2,500**	**3,000**	**4,100**	**3,800**	**2,800**	**7,300**	**3,600**	**2,500**	**3,300**	**5,200**	**1,600**	5
Other analytes[10]	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:

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

[2] DCE = 1,1-Dichloroethene

[3] CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane

[4] na = not analyzed

[5] ne = not established or none applicable

[6] DCA = 1,1-Dichloroethane

[7] TCA = 1,1,1-Trichloroethane

[8] TCE = Trichloroethene

[9] PCE = Tetrachloroethene

[10] All other Method 8010/8021B analytes

[11] nd = not detected above laboratory reporting limit

Table 3. Summary of Groundwater Monitoring Well Data
(results measured in µg/L)

Well No.	MW-3																										
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[1]
DCE[2]	<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	**0.51**	<0.5	**0.81**	<0.5	<0.5	**0.68**	**2.4**	**1.5**	**1.1**	**0.86**	**4.3**	6
CFC 113[3]	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[5]
DCA[6]	<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	**0.50**	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	<1.0	<1.0	<1.0	<1.0	ne
TCA[7]	<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	**1.0**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200
TCE[8]	<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[9]	<0.500	<0.5	<0.5	**0.8**	<0.5	<0.5	<0.5	<0.5	**0.81**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.90**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5
Other analytes[10]	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:

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

[2] DCE = 1,1-Dichloroethene

[3] CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane

[4] na = not analyzed

[5] ne = not established or none applicable

[6] DCA = 1,1-Dichloroethane

[7] TCA = 1,1,1-Trichloroethane

[8] TCE = Trichloroethene

[9] PCE = Tetrachloroethene

[10] All other Method 8010/8021B analytes

[11] nd = not detected above laboratory reporting limit

Table 3. Summary of Groundwater Monitoring Well Data
(results measured in µg/L)

Well No.	MW-4																		
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	MCL[1]
DCE[2]	<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[3]	<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	ne[5]
DCA[6]	<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	ne
TCA[7]	<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[8]	<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[9]	**2.6**	**2.8**	**2.0**	**2.5**	**1.1**	**2.1**	**2.1**	**1.6**	**1.6**	**1.7**	**1.4**	**1.3**	**1.2**	**0.93**	**0.98**	**0.8**	**1.1**	**0.79**	**0.64**	5
Other analytes[10]	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	--

Notes:

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

[2] DCE = 1,1-Dichloroethene

[3] CFC 113 = Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane

[4] na = not analyzed

[5] ne = not established or none applicable

[6] DCA = 1,1-Dichloroethane

[7] TCA = 1,1,1-Trichloroethane

[8] TCE = Trichloroethene

[9] PCE = Tetrachloroethene

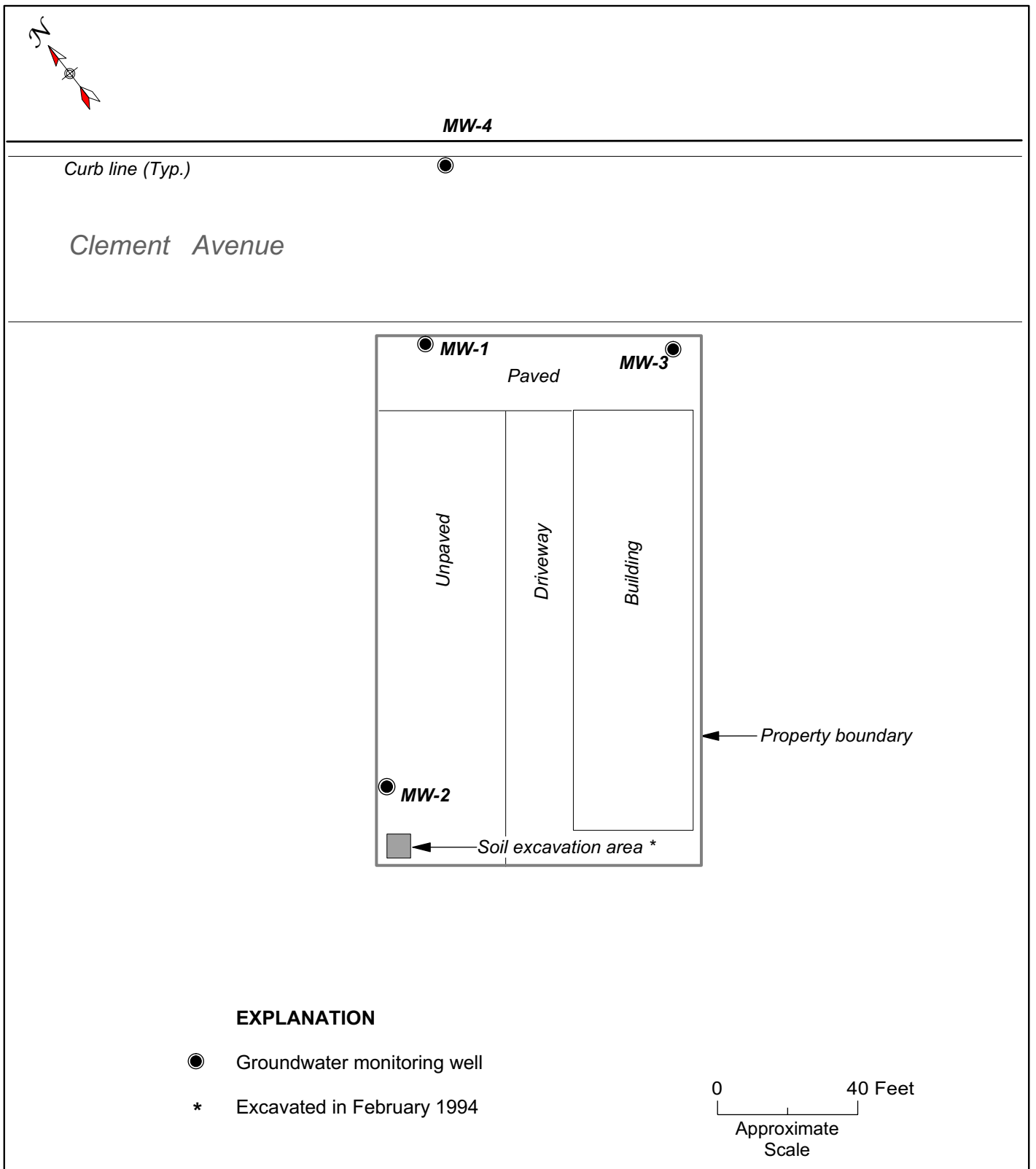
[10] All other Method 8010/8021B analytes

[11] nd = not detected above laboratory reporting limit

CRAWFORD CONSULTING INC.

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

1605fig104.dsf 12/8/04



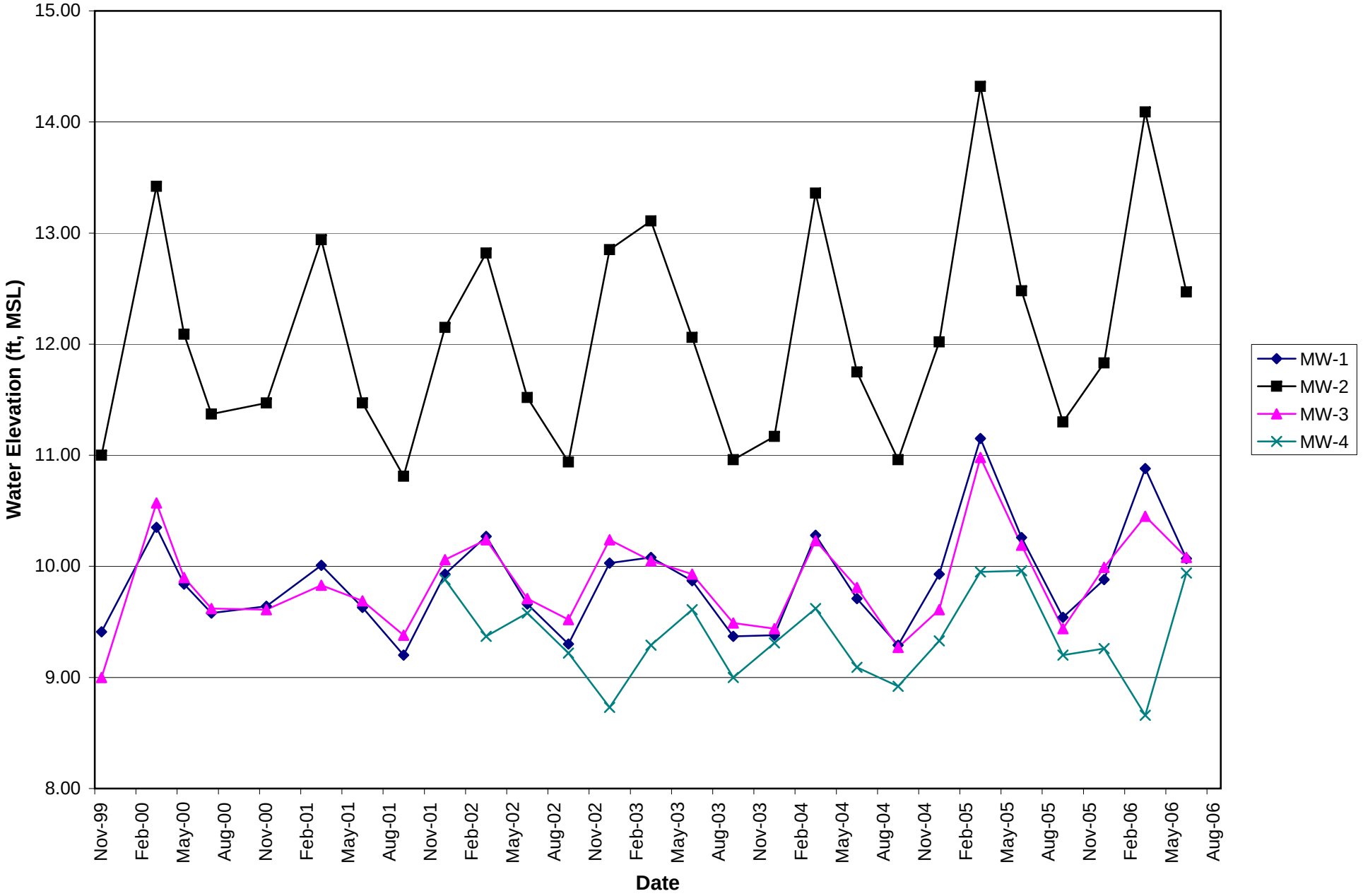
1605fig206Q2.dsf 11/6/06

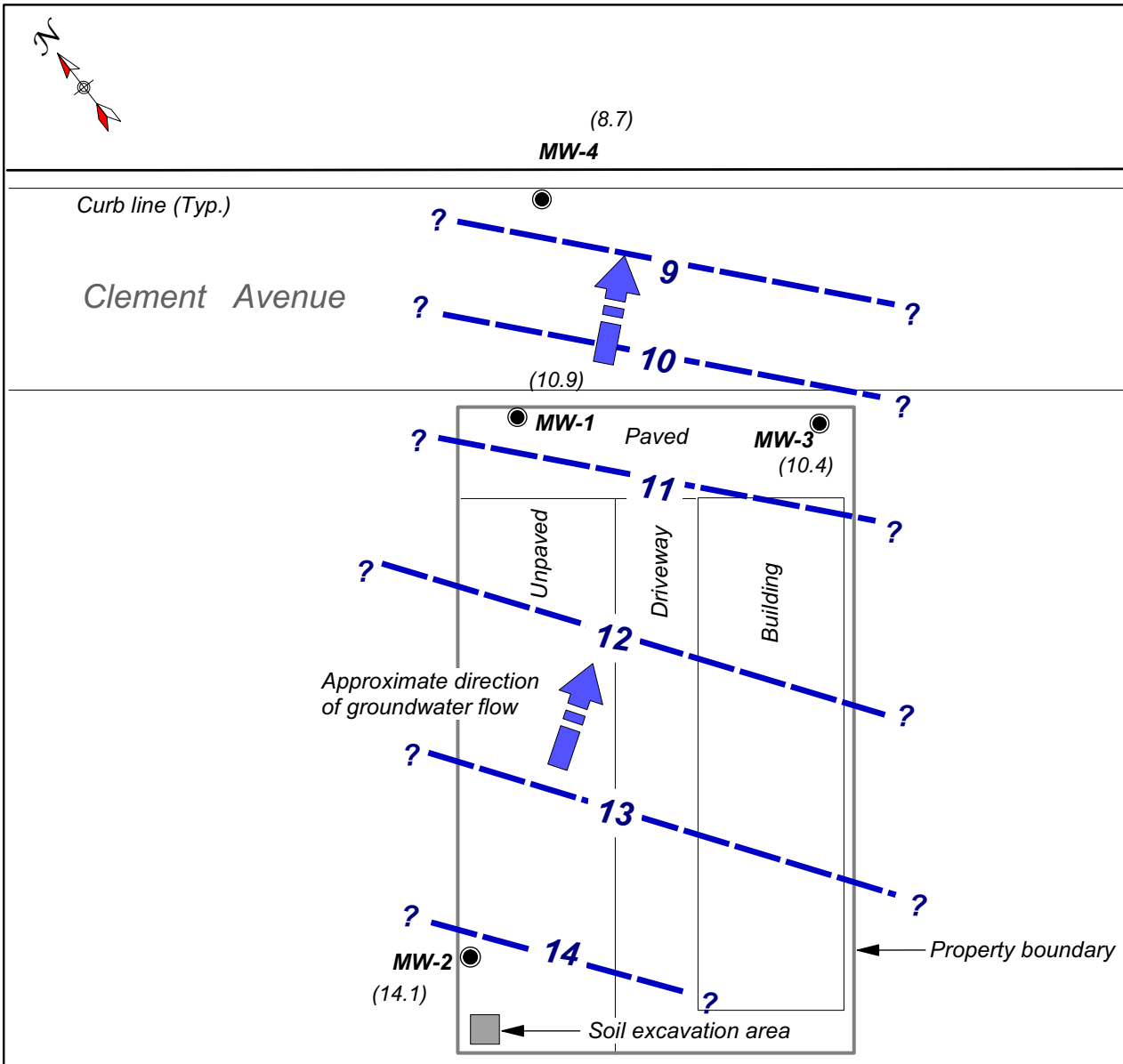
Base map from Conor Pacific/EFW, Off-Site Groundwater Characterization, August 21, 2002.

CRAWFORD CONSULTING INC.

Project No. CS1605
Cargill Salt Dispensing Systems Division
2016 Clement Avenue, Alameda, California
Figure 2. Groundwater Monitoring Well Locations

Figure 3. Graphical Summary of Groundwater Elevations





EXPLANATION

- Monitoring well
- (10.4) Groundwater elevation (Ft.-MSL); measured 3/10/06
- ?—11— Groundwater elevation contour (Ft.-MSL)

0 40 Feet
Approximate Scale

1605fig406Q2.dsf 11/8/06

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

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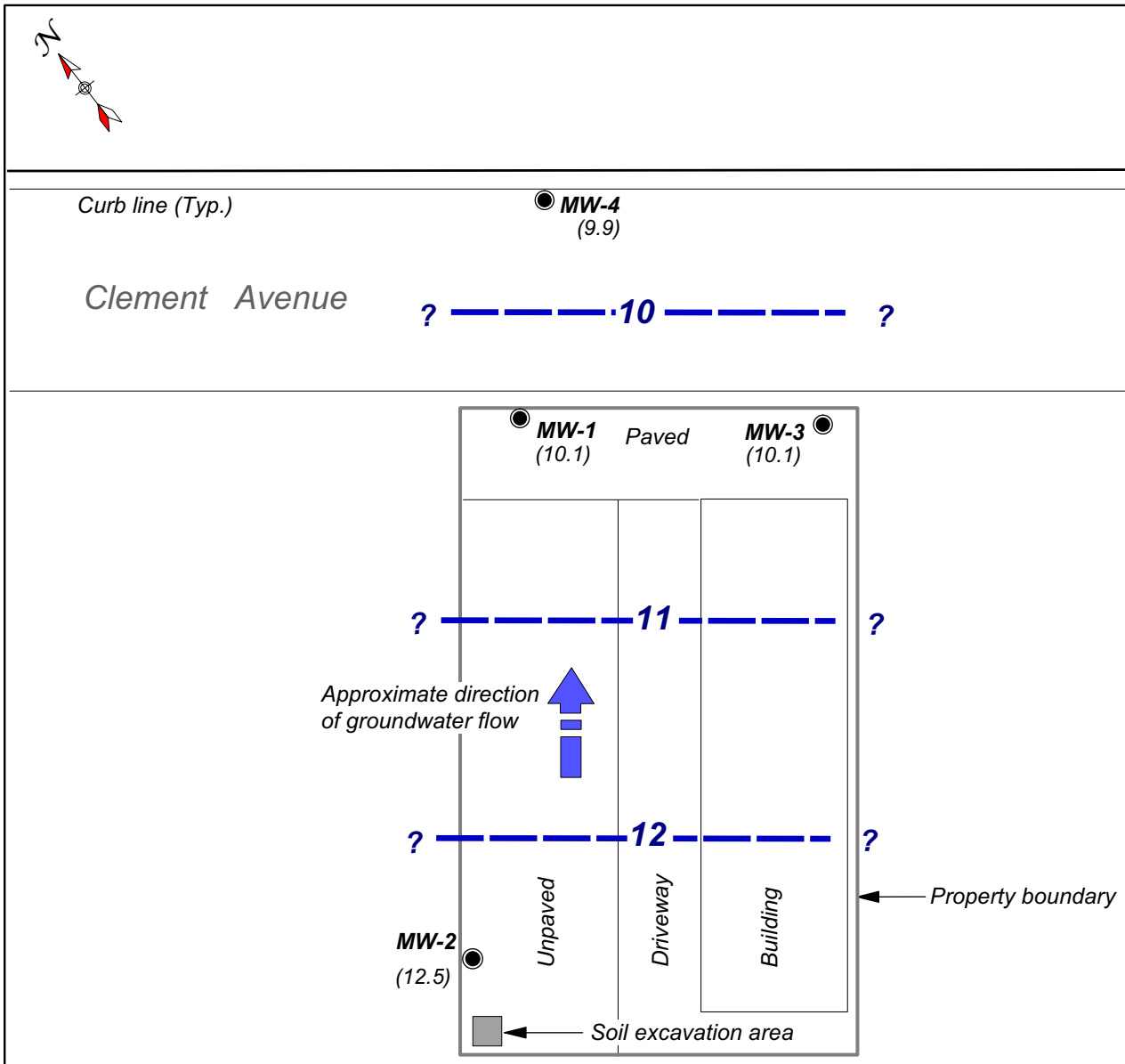
2016 Clement Avenue, Alameda, California
Figure 4. Groundwater Elevation Contours - March 2006



EXPLANATION

- Monitoring well
- (10.1) Groundwater elevation (Ft.-MSL); measured 6/9/06
- ? 11 Groundwater elevation contour (Ft.-MSL)

0 40 Feet
Approximate Scale

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

1605fig506Q2.dsf 11/8/06

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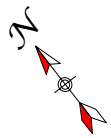
2016 Clement Avenue, Alameda, California
Figure 5. Groundwater Elevation Contours - June 2006



Curb line (Typ.)

Clement Avenue

MW-4

Parameter	3/06	6/06
chloroform	<1.0	<1.0
DCA	<0.5	<0.5
DCE	<0.5	<0.5
PCE	0.79	0.64
TCA	<0.5	<0.5
TCE	<0.5	<0.5

MW-1

Parameter	3/06	6/06
chloroform	1.4	<4.0
DCA	<0.5	<2.0
DCE	<0.5	<2.0
PCE	39	140
TCA	<0.5	<2.0
TCE	3.4	22

MW-3

Parameter	3/06	6/06
chloroform	<1.0	<1.0
DCA	<0.5	0.50
DCE	0.86	4.3
PCE	<0.5	<0.5
TCA	<0.5	<0.5
TCE	<0.5	<0.5

Paved

Unpaved

Driveway

Building

Parameter	3/06	6/06
chloroform	<50	<40
DCA	<25	<20
DCE	<25*	<20
PCE	5,200	1,600
TCA	<25*	<20*
TCE	59	<20

MW-2

Property boundary

Soil excavation area

EXPLANATION

Groundwater monitoring well location

Analyte concentration

chloroform	1.4
DCA	<0.5
DCE	<0.5
PCE	39
TCA	<0.5
TCE	3.4

Analytical parameter

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

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

*For March 2006, DCE and TCA reported in duplicate sample at 0.76 µg/L and 7.0 µg/L, respectively. For June 2006, TCA reported in duplicate sample at 0.9 µg/L (see text).

0 40 Feet

Approximate Scale

1605fig606Q2.dsf 11/6/06

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

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Project No. CS1605
Cargill Salt Dispensing Systems Division
2016 Clement Avenue, Alameda, California
Figure 6. VOC Concentrations in Groundwater – March and June 2006

Figure 7. Graphical Summary of PCE Concentrations

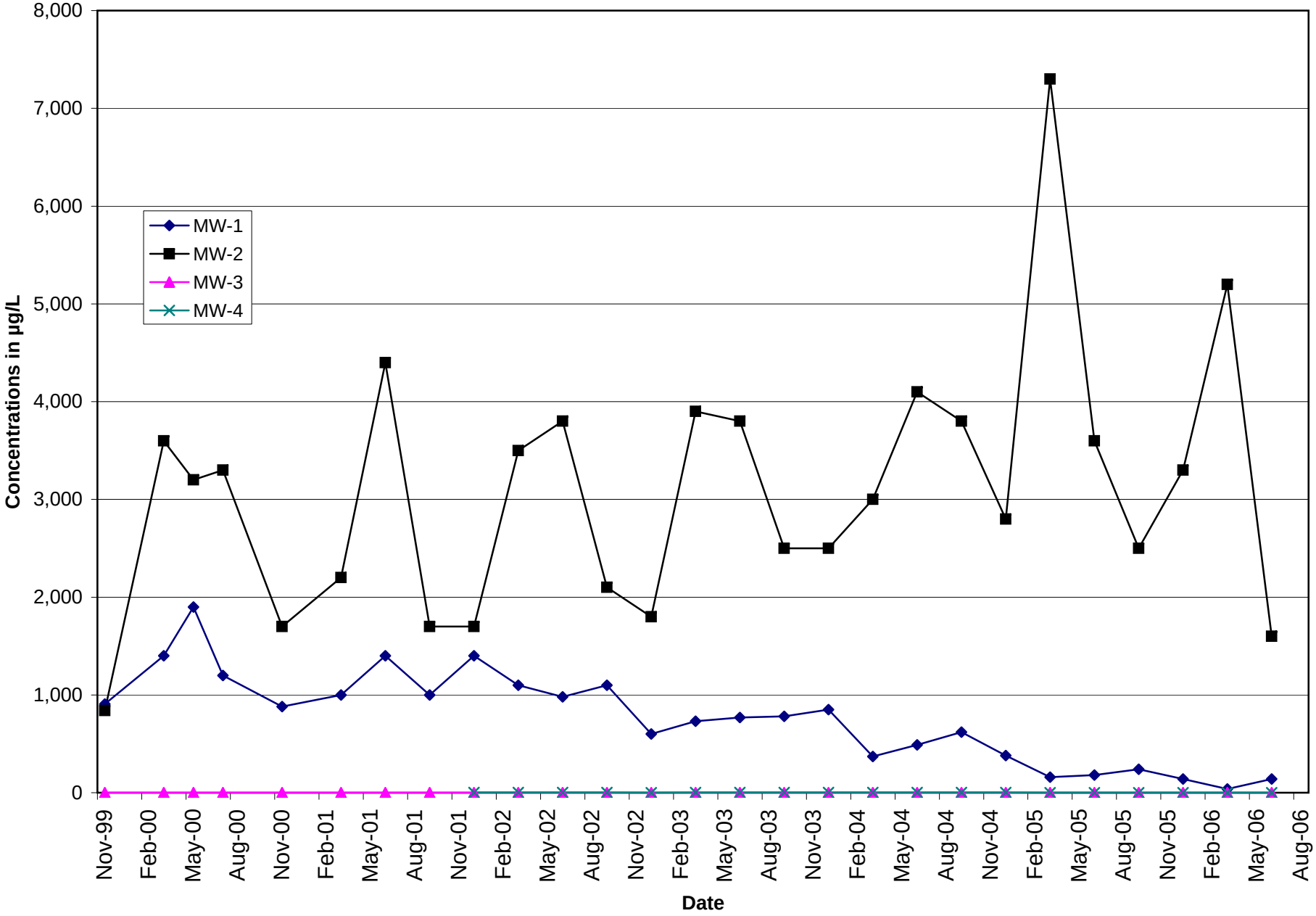
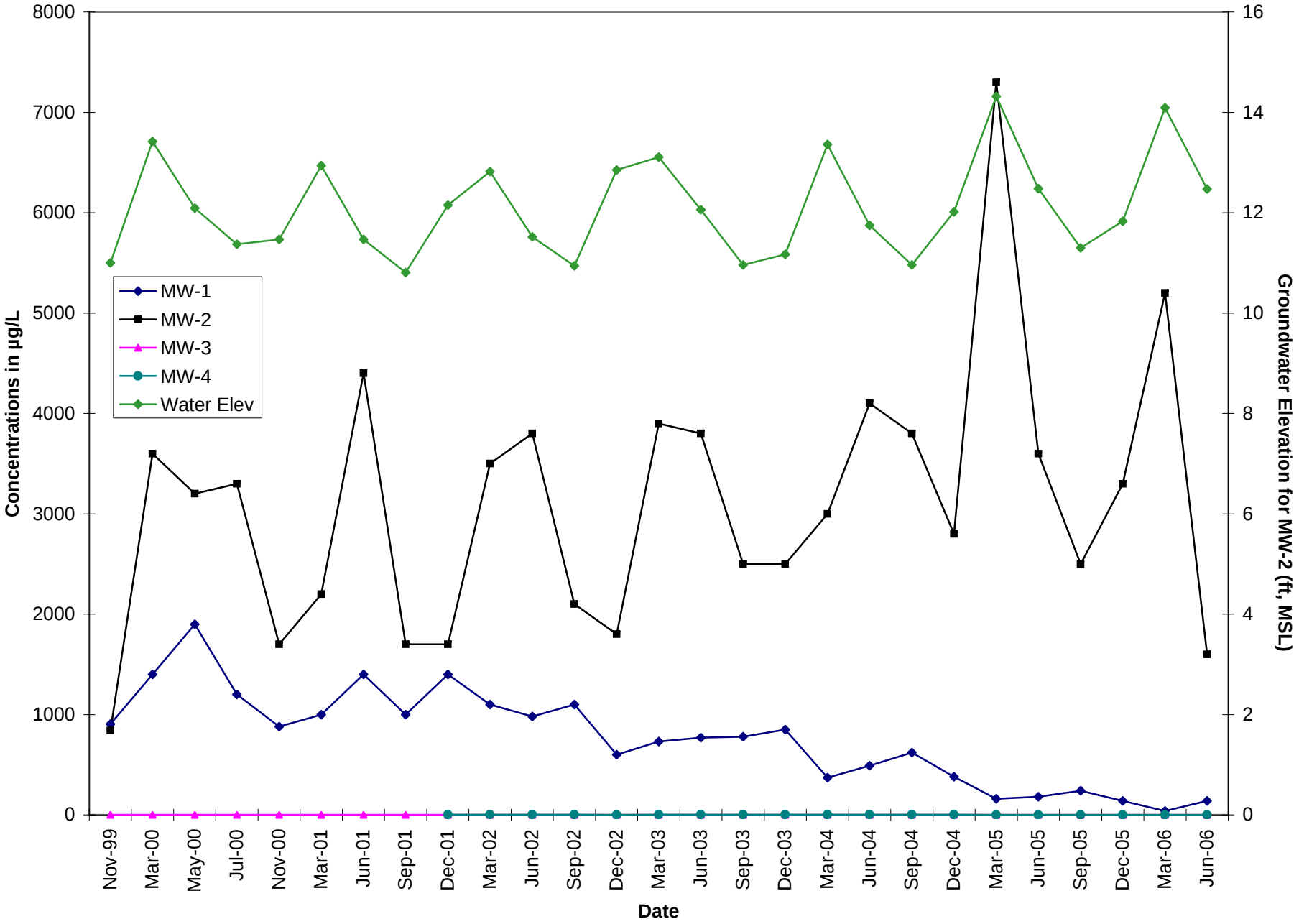


Figure 8. PCE Concentrations vs. Groundwater Elevation



Appendix A

Field Data Sheets

First Quarter 2006

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	3/10/06	0740	2.28	2.28	water in box
MW-2	3/10/06	0747	2.13	2.13	Water in box.
MW-3	3/10/06	0743	2.89	2.85	Water in box
MW-4	3/10/06	0737	3.77	3.77	water in box

Data Collection

Field measurements by:
Print: Manuel L. Gallegos
Signature:
Date: 3-10-06

Reviewed by:
Print: J. Bateman
Signature:
Date: 3/15/06

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: 3.10.06
Finish Date: 3.10.06

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 2.28 Well depth (ft): 18.3
One casing volume (gal.): 0.65 Calculated purge volume (gal.) *(3 x casing volume)*: 1.97
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): ND Method for checking: Interface probe X Clear bailer

WELL PURGING

Date purged: 3-10-06 Start time: 0915 End time: 0941
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other
Purge rate: 0.27 lpm Well yield (H/L): L.Gl
Purge water disposal: Drum on Site

Time (2400 hr)	Cumulative Vol. Purged ~~(gal.)~~ Liters	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
0922	2.4	7.65	353	12.7	Clear	16.2
0931	4.8	7.08	346	14.3	Clear	16.2
0941	7.4	7.11	346	14.2	Clear	5.62

Total Purged (gal.): 7.4 Liters

WELL SAMPLING

Date sampled: 3-10-06 Start time: 0942 End time: 0944
Depth to water (ft) before sampling: 3.75
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: Sunny Ambient temperature (° F): 60
Well condition/Remarks: All Samples taken

Meter calibration: EC @Well 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: 3-10-06
Finish Date: 3-10-06

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 2.13 Well depth (ft): 17.5
One casing volume (gal.): 0.63 Calculated purge volume (gal.) *(3 x casing volume)*: 1.89
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): ND Method for checking: Interface probe X Clear bailer

WELL PURGING

Date purged: 3-10-06 Start time: 0953 End time: 1021
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other ____
Purge rate: 0.25 lpm Well yield (H/L): H-gh
Purge water disposal: Drum on Site

Time (2400 hr)	Cumulative Vol. Purged ~~(gal.)~~ (liters)	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
1004	2.4	7.32	295	14.0	Clear	72.6
1013	4.8	7.05	305	14.2	Clear	15.5
1021	7.2	6.96	304	14.8	Clear	30.1

Total Purged (gal.): 72 liters

WELL SAMPLING

Date sampled: 3-10-06 Start time: 1022 End time: 1024
Depth to water (ft) before sampling: 3.74
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: Sunny Ambient temperature (° F): 60
Well condition/Remarks: All samples taken

Dup-1 taken @ this well.

Meter calibration: EC @ Well MW-4 pH ____
Temperature ____ Turbidity ____

Purged and sampled by (print): Mitchell 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-3
Sample ID: MW-3
Start Date: 3-10-06
Finish Date: 3-10-06

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 2.49 Well depth (ft): 17.6
One casing volume (gal.): 0.40 Calculated purge volume (gal.) *(3 x casing volume)*: 1.80
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): NO Method for checking: Interface probe X Clear bailer

WELL PURGING

Date purged: 3-10-06 Start time: 0829 End time: 0901
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other ____
Purge rate: 0.22 lpm Well yield (H/L): Low
Purge water disposal: Drum on site

Time (2400 hr)	Cumulative Vol. Purged (~~gal~~ liters)	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
0835	2.3	7.74	533	12.4	Clear	14.9
0847	4.6	7.74	591	12.6	Clear	11.1
0901	6.9	7.80	584	12.7	Clear	3.31

Total Purged (gal.): 6.9 liters

WELL SAMPLING

Date sampled: 3-10-06 Start time: 0902 End time: 0905
Depth to water (ft) before sampling: 14.89
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: Sunny Ambient temperature (° F): 60
Well condition/Remarks: All Samples taken

Meter calibration: EC 2 well MW-4 pH ____
Temperature ____ Turbidity ____

Purged and sampled by (print): Manuel L. 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-4
Sample ID: MW-4
Start Date: 3-10-06
Finish Date: 3-10-06

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 3.77 Well depth (ft): 18.5
One casing volume (gal.): 0.62 Calculated purge volume (gal.) *(3 x casing volume)*: 1.81
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): NM Method for checking: Interface probe X Clear bailer

WELL PURGING

Date purged: 3-10-06 Start time: 0754 End time: 0816
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other ____
Purge rate: 0.34 lpm Well yield (H/L): H: SL
Purge water disposal: Drum on Site

Time (2400 hr)	Cumulative Vol. Purged ~~(gal.)~~ Liters	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
0801	2.2	7.24	654	15.4	Clear	20.0
0809	4.4	7.59	630	15.5	Clear	9.83
0816	6.8	7.57	644	16.1	Clear	5.54

Total Purged (gal.): 6.8 liters

WELL SAMPLING

Date sampled: 3-10-06 Start time: 0912 End time: 0820
Depth to water (ft) before sampling: 12.11
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: Sunny / Clear Ambient temperature (° F): 60
Well condition/Remarks:
All Samples Taken

Meter calibration: EC 15.780/15.000 pH 703-700/1006-1000/402-400
Temperature 6.5 Turbidity 1.12-1.00

Purged and sampled by (print): M. Gallegos
Signature: [signature] Reviewed by: [signature]

Second Quarter 2006

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	6/9/06	0945	3.09	3.09	ok
MW-2	6/9/06	1003	3.75	3.75	ok
MW-3	6/9/06	0953	3.26	3.26	ok
MW-4	6/9/06	0730	2.49	2.49	ok

Data Collection

Field measurements by:
Print: Manuel L. Gallegos
Signature: M L. Gallegos
Date: 6/9/06

Reviewed by:
Print: J. Butera
Signature: J Butera
Date: 6/13/06

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: 6-9-06
Finish Date: 6-9-06

WELL INFORMATION
Casing diameter (in.): ~~0.75~~ 1.0 Depth to water (ft): 3.09 Well depth (ft): 18.3
One casing volume (gal.): 0.62 Calculated purge volume (gal.) *(3 x casing volume)*: 1.87
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): NM Method for checkingInterface probe X Clear bailer

WELL PURGING
Date purged: 6-9-06 Start time: 1017 End time: 1044
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other
Purge rate: 0.25 lpm Well yield (H/L): High
Purge water disposal: Drum on S.K

Time (2400 hr)	Cumulative Vol. Purged ~~(gal.)~~ (Liter)	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
1026	2.3	7.57	346	18.3	Clear	5.55
1035	4.6	7.13	332	18.6	Clear	5.14
1044	6.9	7.07	331	18.7	Clear	3.44

Total Purged (gal.): 6.9 Liters

WELL SAMPLING
Date sampled: 6-9-06 Start time: 1045 End time: 1047
Depth to water (ft) before sampling: 4.46
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: Sunny Ambient temperature (° F): 65
Well condition/Remarks: All samples taken

Meter calibration: EC ____ pH ____
Temperature ____ Turbidity ____

Purged and sampled by (print): Manuel L. 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: 6-9-06
Finish Date: 6-9-06

WELL INFORMATION

Casing diameter (in.): 0.75 Depth to water (ft): ~~10.03~~ 10.75 Well depth (ft): 17.5
One casing volume (gal.): 0.56 Calculated purge volume (gal.) *(3 x casing volume)*: 1.69
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): No Method for checkingInterface probe X Clear bailer

WELL PURGING

Date purged: 6-9-06 Start time: ~~1049~~ 1055 End time: 1123
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other
Purge rate: 0.75 lpm Well yield (H/L): High
Purge water disposal: Drum or S.A.

Time (2400 hr)	Cumulative Vol. Purged ~~(gal.)~~ (Liter)	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
1103	2.1	7.08	305	18.1	Clear	59.2
1113	4.2	7.21	299	17.6	Clear	35.4
1123	6.3	7.14	304	17.5	Clear	21.8

Total Purged (gal.): 6.3-liters

WELL SAMPLING

Date sampled: 6/9/06 Start time: 1124 End time: 1127
Depth to water (ft) before sampling: 4.63
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other

Weather conditions: Sunny Ambient temperature (° F): 65
Well condition/Remarks: All Samples taken

* Dup-1

Meter calibration: EC ____ pH ____
Temperature ____ Turbidity ____

Purged and sampled by (print): Manuel L. Gallegos
Signature: Reviewed by: J Butler

SAMPLE COLLECTION FIELD DATA

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

Well ID: MW-3
Sample ID: MW-3
Start Date: 6-9-06
Finish Date: 6-9-06

WELL INFORMATION

Casing diameter (in.): 0.75 Depth to water (ft): 3.26 Well depth (ft): 17.6
One casing volume (gal.): 0.56 Calculated purge volume (gal.) *(3 x casing volume)*: 1.76
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): ND Method for checkingInterface probe X Clear bailer

WELL PURGING

Date purged: 6-9-06 Start time: 0935 End time: 1008
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump X
PVC bailer ____ Teflon bailer ____ Other ____
Purge rate: 0.20 lpm Well yield (H/L): Low
Purge water disposal: Drum on Site

Time (2400 hr)	Cumulative Vol. Purged (gal) (Liter)	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
0947	2.2	7.73	518	17.1	Clear	55.5
0957	4.4	7.50	554	17.2	Clear	44.5
1008	6.6	7.50	548	17.1	Clear	39.9

Total Purged (gal.): 6.6-litres

WELL SAMPLING

Date sampled: 6/9/06 Start time: 1009 End time: 1012
Depth to water (ft) before sampling: 13.76
Sampling equipment: Peristaltic pump X Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: Sunny Ambient temperature (° F): 64
Well condition/Remarks: All samples taken

Meter calibration: EC ____ pH ____
Temperature ____ Turbidity ____

Purged and sampled by (print): Manuel L. 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-4
Sample ID: MW-4
Start Date: 6-9-06
Finish Date: 6-9-06

WELL INFORMATION

Casing diameter (in.): 1.0 Depth to water (ft): 2.49 Well depth (ft): 18.5
One casing volume (gal.): 0.65 Calculated purge volume (gal.) *(3 x casing volume)*: 1.96
One casing volume = π x [casing radius (in.) x 1 ft/12 in.]^2 x [well depth (ft) - depth to water (ft)] x 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): NM Method for checkingInterface probe √ Clear bailer

WELL PURGING

Date purged: 6-9-06 Start time: 0736 End time: 0815
Purging equipment: Submersible pump ____ Bladder pump ____ Peristaltic pump √
PVC bailer ____ Teflon bailer ____ Other ____
Purge rate: 0.5 l/pm Well yield (H/L): High
Purge water disposal: Drum on Site.

Time (2400 hr)	Cumulative Vol. Purged ~~(gal.)~~ (Liters)	pH (units)	EC (µS/cm)	T (° C)	Color (Visual)	Turbidity (Visual or NTU)
0747	2.4	6.52	636	18.7	Clear	0.89
0801	4.8	6.98	595	18.5	Clear	2.38
0815	7.2	7.07	612	18.4	Clear	2.91

Total Purged (gal.): 7.2 Liters

WELL SAMPLING

Date sampled: 6-9-06 Start time: 0816 End time: 0819
Depth to water (ft) before sampling: 10.40
Sampling equipment: Peristaltic pump √ Bladder pump ____ Teflon bailer ____
PVC bailer ____ Other ____

Weather conditions: Cloudy Ambient temperature (° F): 60
Well condition/Remarks: All samples taken

Meter calibration: EC 15,040 - 15,000 pH 6.99 7.00 / 9.85 10.00 / 384 400
Temperature 16.4 Turbidity 1.0 /

Purged and sampled by (print): Michael Hall (GP)
Signature: Michael Hall Reviewed by: JB

Appendix B

Groundwater Velocity Calculations

APPENDIX B
GROUNDWATER VELOCITY CALCULATIONS

FOR CARGILL ALAMEDA SITE, 2006 DATA

GROUNDWATER VELOCITY FORMULA

$V = Ki/n$ where:

V = average linear groundwater velocity
K = hydraulic conductivity
i = hydraulic gradient
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:

March 2006	0.03
June 2006	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)
March 2006	NE	0.00002	0.030	0.33	2
June 2006	NE	0.00002	0.016	0.33	1

Calculations and assumptions prepared by: Mark C. Wheeler

Date: 11/8/2006

Appendix C

Certified Analytical Reports and Chain-of-Custody Documentation

First Quarter 2006

ANALYTICAL REPORT

Job Number: 720-2508-1

Job Description: Alameda Facility CS 1605

For:
Crawford Consulting Inc
2 North First Street 4th Floor
San Jose, CA 95113-1212

Attention: Mark Wheeler

Dimple Sharma
Project Manager I
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03/17/2006

cc: Dana Johnston

Project Manager: Dimple Sharma

METHOD SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS (Low Level)	STL-SF	SW846 8260B	
Purge-and-Trap	STL-SF		SW846 5030B

LAB REFERENCES:

STL-SF = STL-San Francisco

METHOD REFERENCES:

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

SAMPLE SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-2508-1	MW-1	Water	03/10/2006 0942	03/10/2006 1125
720-2508-2	MW-2	Water	03/10/2006 1022	03/10/2006 1125
720-2508-3	MW-3	Water	03/10/2006 0902	03/10/2006 1125
720-2508-4	MW-4	Water	03/10/2006 0817	03/10/2006 1125
720-2508-5	DUP-1	Water	03/10/2006 0000	03/10/2006 1125
720-2508-6	TB-1	Water	03/10/2006 0000	03/10/2006 1125

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Client Sample ID: **MW-1**

Lab Sample ID: 720-2508-1
Client Matrix: Water

Date Sampled: 03/10/2006 0942
Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 03/15/2006 1429
Date Prepared: 03/15/2006 1429

Analysis Batch: 720-6566

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	1.4		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	3.4		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	39		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	93	77 - 121
4-Bromofluorobenzene	102	79 - 118
1,2-Dichloroethane-d4	104	78 - 117

Client: Crawford Consulting Inc | Job Number: 720-2508-1

Client Sample ID: **MW-2**

Lab Sample ID: 720-2508-2 | Date Sampled: 03/10/2006 1022
Client Matrix: Water | Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B | Analysis Batch: 720-6527 | Instrument ID: Saturn 2K3
Preparation: 5030B | Lab File ID: d:\data\200603\031406\720-
Dilution: 50 | Initial Weight/Volume: 40 mL
Date Analyzed: 03/14/2006 1530 | Final Weight/Volume: 40 mL
Date Prepared: 03/14/2006 1530

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		25
1,1-Dichloroethane	ND		25
Dichlorodifluoromethane	ND		25
Vinyl chloride	ND		25
Chloroethane	ND		50
Trichlorofluoromethane	ND		50
Methylene Chloride	ND		250
trans-1,2-Dichloroethene	ND		25
cis-1,2-Dichloroethene	ND		25
Chloroform	ND		50
1,1,1-Trichloroethane	ND		25
Carbon tetrachloride	ND		25
1,2-Dichloroethane	ND		25
Trichloroethene	59		25
1,2-Dichloropropane	ND		25
Dichlorobromomethane	ND		25
trans-1,3-Dichloropropene	ND		25
cis-1,3-Dichloropropene	ND		25
1,1,2-Trichloroethane	ND		25
Chlorodibromomethane	ND		25
Chlorobenzene	ND		25
Bromoform	ND		50
1,1,2,2-Tetrachloroethane	ND		25
1,3-Dichlorobenzene	ND		25
1,4-Dichlorobenzene	ND		25
1,2-Dichlorobenzene	ND		25
Chloromethane	ND		50
Bromomethane	ND		50
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25
EDB	ND		25
1,2,4-Trichlorobenzene	ND		50

Surrogate	%Rec	Acceptance Limits
Toluene-d8	91	77 - 121
4-Bromofluorobenzene	101	79 - 118
1,2-Dichloroethane-d4	88	78 - 117

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Client Sample ID: **MW-2**

Lab Sample ID: 720-2508-2
Client Matrix: Water

Date Sampled: 03/10/2006 1022
Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 100
Date Analyzed: 03/15/2006 1610
Date Prepared: 03/15/2006 1610

Analysis Batch: 720-6566

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
Tetrachloroethene	5200		50

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Client Sample ID: **MW-3**

Lab Sample ID: 720-2508-3
Client Matrix: Water

Date Sampled: 03/10/2006 0902
Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 03/15/2006 1503
Date Prepared: 03/15/2006 1503

Analysis Batch: 720-6566

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	0.86		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	94	77 - 121
4-Bromofluorobenzene	94	79 - 118
1,2-Dichloroethane-d4	108	78 - 117

Client: Crawford Consulting Inc | Job Number: 720-2508-1

Client Sample ID: **MW-4**

Lab Sample ID: 720-2508-4 | Date Sampled: 03/10/2006 0817
Client Matrix: Water | Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B | Analysis Batch: 720-6527 | Instrument ID: Saturn 2K3
Preparation: 5030B | Lab File ID: d:\data\200603\031406\720-
Dilution: 1.0 | Initial Weight/Volume: 40 mL
Date Analyzed: 03/14/2006 1637 | Final Weight/Volume: 40 mL
Date Prepared: 03/14/2006 1637

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	0.79		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	90	77 - 121
4-Bromofluorobenzene	103	79 - 118
1,2-Dichloroethane-d4	86	78 - 117

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Client Sample ID: **DUP-1**

Lab Sample ID: 720-2508-5
Client Matrix: Water

Date Sampled: 03/10/2006 0000
Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 03/14/2006 1710
Date Prepared: 03/14/2006 1710

Analysis Batch: 720-6527

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200603\031406\720-
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	0.76		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	7.0		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	60		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	91	77 - 121
4-Bromofluorobenzene	102	79 - 118
1,2-Dichloroethane-d4	86	78 - 117

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Client Sample ID: **DUP-1**

Lab Sample ID: 720-2508-5
Client Matrix: Water

Date Sampled: 03/10/2006 0000
Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 100
Date Analyzed: 03/15/2006 1643
Date Prepared: 03/15/2006 1643

Analysis Batch: 720-6566

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
Tetrachloroethene	5600		50

Client: Crawford Consulting Inc | Job Number: 720-2508-1

Client Sample ID: **TB-1**

Lab Sample ID: 720-2508-6 | Date Sampled: 03/10/2006 0000
Client Matrix: Water | Date Received: 03/10/2006 1125

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B | Analysis Batch: 720-6528 | Instrument ID: Varian 3900F
Preparation: 5030B | Lab File ID: c:\saturnws\data\200603\03
Dilution: 1.0 | Initial Weight/Volume: 40 mL
Date Analyzed: 03/14/2006 1033 | Final Weight/Volume: 40 mL
Date Prepared: 03/14/2006 1033

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	99	77 - 121
4-Bromofluorobenzene	100	79 - 118
1,2-Dichloroethane-d4	99	78 - 117

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

Client: Crawford Consulting Inc

Job Number: 720-2508-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS VOA				
Analysis Batch:720-6527				
LCS 720-6527/9	Lab Control Spike	Water	8260B	
MB 720-6527/10	Method Blank	Water	8260B	
720-2508-2	MW-2	Water	8260B	
720-2508-4	MW-4	Water	8260B	
720-2508-5	DUP-1	Water	8260B	
720-2548-B-4 MS	Matrix Spike	Water	8260B	
720-2548-B-4 MSD	Matrix Spike Duplicate	Water	8260B	
Analysis Batch:720-6528				
LCS 720-6528/7	Lab Control Spike	Water	8260B	
MB 720-6528/8	Method Blank	Water	8260B	
720-2508-6	TB-1	Water	8260B	
720-2524-D-7 MS	Matrix Spike	Water	8260B	
720-2524-E-7 MSD	Matrix Spike Duplicate	Water	8260B	
Analysis Batch:720-6566				
LCS 720-6566/8	Lab Control Spike	Water	8260B	
MB 720-6566/9	Method Blank	Water	8260B	
720-2508-1	MW-1	Water	8260B	
720-2508-2	MW-2	Water	8260B	
720-2508-3	MW-3	Water	8260B	
720-2508-5	DUP-1	Water	8260B	
720-2560-D-1 MS	Matrix Spike	Water	8260B	
720-2560-B-1 MSD	Matrix Spike Duplicate	Water	8260B	

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Method Blank - Batch: 720-6527

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-6527/10
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/14/2006 0959
Date Prepared: 03/14/2006 0959

Analysis Batch: 720-6527
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200603\031406\MB
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8	92	77 - 121
4-Bromofluorobenzene	103	79 - 118
1,2-Dichloroethane-d4	88	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Laboratory Control Sample - Batch: 720-6527

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-6527/9
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/14/2006 0926
Date Prepared: 03/14/2006 0926

Analysis Batch: 720-6527
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200603\031406\LC
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	17	84	65 - 125	
Trichloroethene	20.0	17	84	74 - 134	
Chlorobenzene	20.0	19	95	61 - 121	

Surrogate	% Rec	Acceptance Limits
Toluene-d8	91	77 - 121
4-Bromofluorobenzene	102	79 - 118
1,2-Dichloroethane-d4	85	78 - 117

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-6527

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-2548-B-4 MS
Client Matrix: Water
Dilution: 20
Date Analyzed: 03/14/2006 1138
Date Prepared: 03/14/2006 1138

Analysis Batch: 720-6527
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200603\031406\72
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-2548-B-4 MSD
Client Matrix: Water
Dilution: 20
Date Analyzed: 03/14/2006 1211
Date Prepared: 03/14/2006 1211

Analysis Batch: 720-6527
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200603\031406\720
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethene	81	84	65 - 125	3	20		
Trichloroethene	84	84	74 - 134	1	20		
Chlorobenzene	96	97	61 - 121	1	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8	93	91	77 - 121
4-Bromofluorobenzene	101	103	79 - 118
1,2-Dichloroethane-d4	92	89	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Method Blank - Batch: 720-6528

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-6528/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/14/2006 1000
Date Prepared: 03/14/2006 1000

Analysis Batch: 720-6528
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8	98	77 - 121
4-Bromofluorobenzene	94	79 - 118
1,2-Dichloroethane-d4	104	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Laboratory Control Sample - Batch: 720-6528

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-6528/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/14/2006 0927
Date Prepared: 03/14/2006 0927

Analysis Batch: 720-6528
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	17	86	65 - 125	
Trichloroethene	20.0	17	86	74 - 134	
Chlorobenzene	20.0	19	97	61 - 121	

Surrogate	% Rec	Acceptance Limits
Toluene-d8	100	77 - 121
4-Bromofluorobenzene	97	79 - 118
1,2-Dichloroethane-d4	96	78 - 117

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-6528

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-2524-D-7 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/14/2006 1352
Date Prepared: 03/14/2006 1352

Analysis Batch: 720-6528
Prep Batch: N/A

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\(
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-2524-E-7 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/14/2006 1426
Date Prepared: 03/14/2006 1426

Analysis Batch: 720-6528
Prep Batch: N/A

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethene	91	88	65 - 125	2	20		
Trichloroethene	83	81	74 - 134	3	20		
Chlorobenzene	100	96	61 - 121	5	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Method Blank - Batch: 720-6566

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-6566/9
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 1004
Date Prepared: 03/15/2006 1004

Analysis Batch: 720-6566
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8	95	77 - 121
4-Bromofluorobenzene	102	79 - 118
1,2-Dichloroethane-d4	100	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Laboratory Control Sample - Batch: 720-6566

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-6566/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/15/2006 0931
Date Prepared: 03/15/2006 0931

Analysis Batch: 720-6566
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	17	87	65 - 125	
Trichloroethene	20.0	18	90	74 - 134	
Chlorobenzene	20.0	20	100	61 - 121	

Surrogate	% Rec	Acceptance Limits
Toluene-d8	100	77 - 121
4-Bromofluorobenzene	99	79 - 118
1,2-Dichloroethane-d4	97	78 - 117

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-6566

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-2560-D-1 MS
Client Matrix: Water
Dilution: 2.0
Date Analyzed: 03/15/2006 1536
Date Prepared: 03/15/2006 1536

Analysis Batch: 720-6566
Prep Batch: N/A

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\(
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-2560-B-1 MSD
Client Matrix: Water
Dilution: 2.0
Date Analyzed: 03/15/2006 1322
Date Prepared: 03/15/2006 1322

Analysis Batch: 720-6566
Prep Batch: N/A

Instrument ID: Varian 3900F
Lab File ID: c:\saturnws\data\200603\03
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethene	89	95	65 - 125	6	20		
Trichloroethene	79	79	74 - 134	0	20		
Chlorobenzene	96	100	61 - 121	4	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8	96	95	77 - 121
4-Bromofluorobenzene	100	98	79 - 118
1,2-Dichloroethane-d4	106	104	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

STL ChromaLab

1220 Quarry Lane, Pleasanton, CA 94566
(925) 484-1919 FAX (925) 484-1096

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Service Request: _____ Date: 3/10/06

Project Name: Alameda Facility
Project Number: CS1605
Project Manager: Dana Johnston
Company/Address: Crawford Consulting, Inc.
2 North First St, 4th Floor
San Jose, CA 95113
Phone: (408) 287-9934
Fax: (408) 287-9937

Sampler's Signature: [signature]

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	Volatile Organics (VOCs) (EPA 8021B)	Pb (7421); As (7060) Same as Metals	COD, TKN 500 ml plastic H_2SO_4	Chloride, Nitrate 500 ml plastic NP	pH, Conductivity 500 ml plastic NP	Total Phenols 2 x 500 ml glass H_2SO_4	**Volatile Organics (8010) 3 x 40 ml vial**	TPHgBTEX 2 x 40 ml vial HCl			REMARKS
					Analysis Requested											
MW-1	3/10/06	0942		Water	3							X				
MW-2	3/10/06	1022		Water	3							X				
MW-3	3/10/06	0907		Water	3							X				
MW-4	3/10/06	0817		water	3							X				
DUP-1	3/10/06	—		Water	3							X				
TB-1	3/10/06	—		Water	1							X				

Relinquished By	Received By
Signature: [signature]	Signature: [signature]
Printed Name: FSI	Printed Name: Joan Mullen
Firm: 3-10-06	Firm: STLSF
Date/Time: 1120	Date/Time: 3-10-06 1125
Relinquished By	Received By
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

TURNAROUND REQUIREMENTS
____ 24 hr ____ 48 hr ____ 5 day
x Standard (5 working days)
____ Provide Verbal Preliminary Results
x Provide pdf Results
Due Date _____

REPORT REQUIREMENTS
I. Routine Report
x II. Report (includes DUP, MS MSD, as required, may be charged as samples)
III. Data Validation Report (includes All Raw Data)
RWQCB
(MDLs/PQLs/TRACE#)

INVOICE INFORMATION
P.O. # _____
Bill to: _____

SAMPLE RECEIPT
Shipping VIA: _____
Shipping #: _____
Condition: _____

Special Instructions/Comments:

Please refer to Project File for detection limits and report MRLs only

Please pdf results to: Dana Johnston
dana@crawfordconsulting.com

LOGIN SAMPLE RECEIPT CHECK LIST

Client: Crawford Consulting Inc

Job Number: 720-2508-1

Login Number: 2508

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
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	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

Second Quarter 2006

ANALYTICAL REPORT

Job Number: 720-3999-1

Job Description: Alameda Facility CS 1605

For:
Crawford Consulting Inc
2 North First Street 4th Floor
San Jose, CA 95113-1212

Attention: Mark Wheeler

Dimple Sharma
Project Manager I
dsharma@stl-inc.com
06/16/2006

cc: Dana Johnston

Project Manager: Dimple Sharma

METHOD SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS (Low Level)	STL-SF	SW846 8260B	
Purge-and-Trap	STL-SF		SW846 5030B

LAB REFERENCES:

STL-SF = STL-San Francisco

METHOD REFERENCES:

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

SAMPLE SUMMARY

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-3999-1	MW-1	Water	06/09/2006 1045	06/09/2006 1215
720-3999-2	MW-2	Water	06/09/2006 1124	06/09/2006 1215
720-3999-3	MW-3	Water	06/09/2006 1009	06/09/2006 1215
720-3999-4	MW-4	Water	06/09/2006 0816	06/09/2006 1215
720-3999-5	DUP-1	Water	06/09/2006 0000	06/09/2006 1215
720-3999-6TB	TB-1	Water	06/09/2006 0000	06/09/2006 1215

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Client Sample ID: MW-1

Lab Sample ID: 720-3999-1
Client Matrix: Water

Date Sampled: 06/09/2006 1045
Date Received: 06/09/2006 1215

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 4.0
Date Analyzed: 06/12/2006 1855
Date Prepared: 06/12/2006 1855

Analysis Batch: 720-9866

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061206\720-
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		2.0
1,1-Dichloroethane	ND		2.0
Dichlorodifluoromethane	ND		2.0
Vinyl chloride	ND		2.0
Chloroethane	ND		4.0
Trichlorofluoromethane	ND		4.0
Methylene Chloride	ND		20
trans-1,2-Dichloroethene	ND		2.0
cis-1,2-Dichloroethene	ND		2.0
Chloroform	ND		4.0
1,1,1-Trichloroethane	ND		2.0
Carbon tetrachloride	ND		2.0
1,2-Dichloroethane	ND		2.0
Trichloroethene	22		2.0
1,2-Dichloropropane	ND		2.0
Dichlorobromomethane	ND		2.0
trans-1,3-Dichloropropene	ND		2.0
cis-1,3-Dichloropropene	ND		2.0
1,1,2-Trichloroethane	ND		2.0
Tetrachloroethene	140		2.0
Chlorodibromomethane	ND		2.0
Chlorobenzene	ND		2.0
Bromoform	ND		4.0
1,1,2,2-Tetrachloroethane	ND		2.0
1,3-Dichlorobenzene	ND		2.0
1,4-Dichlorobenzene	ND		2.0
1,2-Dichlorobenzene	ND		2.0
Chloromethane	ND		4.0
Bromomethane	ND		4.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0
EDB	ND		2.0
1,2,4-Trichlorobenzene	ND		4.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	100	77 - 121
4-Bromofluorobenzene	109	79 - 118
1,2-Dichloroethane-d4	105	78 - 117

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Client Sample ID: **MW-2**

Lab Sample ID: 720-3999-2
Client Matrix: Water

Date Sampled: 06/09/2006 1124
Date Received: 06/09/2006 1215

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 40
Date Analyzed: 06/12/2006 1929
Date Prepared: 06/12/2006 1929

Analysis Batch: 720-9866

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061206\720-
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		20
1,1-Dichloroethane	ND		20
Dichlorodifluoromethane	ND		20
Vinyl chloride	ND		20
Chloroethane	ND		40
Trichlorofluoromethane	ND		40
Methylene Chloride	ND		200
trans-1,2-Dichloroethene	ND		20
cis-1,2-Dichloroethene	ND		20
Chloroform	ND		40
1,1,1-Trichloroethane	ND		20
Carbon tetrachloride	ND		20
1,2-Dichloroethane	ND		20
Trichloroethene	ND		20
1,2-Dichloropropane	ND		20
Dichlorobromomethane	ND		20
trans-1,3-Dichloropropene	ND		20
cis-1,3-Dichloropropene	ND		20
1,1,2-Trichloroethane	ND		20
Tetrachloroethene	1600		20
Chlorodibromomethane	ND		20
Chlorobenzene	ND		20
Bromoform	ND		40
1,1,2,2-Tetrachloroethane	ND		20
1,3-Dichlorobenzene	ND		20
1,4-Dichlorobenzene	ND		20
1,2-Dichlorobenzene	ND		20
Chloromethane	ND		40
Bromomethane	ND		40
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20
EDB	ND		20
1,2,4-Trichlorobenzene	ND		40

Surrogate	%Rec	Acceptance Limits
Toluene-d8	99	77 - 121
4-Bromofluorobenzene	107	79 - 118
1,2-Dichloroethane-d4	113	78 - 117

Client: Crawford Consulting Inc | Job Number: 720-3999-1

Client Sample ID: **MW-3**

Lab Sample ID: 720-3999-3 | Date Sampled: 06/09/2006 1009
Client Matrix: Water | Date Received: 06/09/2006 1215

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B | Analysis Batch: 720-9929 | Instrument ID: Saturn 2K3
Preparation: 5030B | Lab File ID: d:\data\200606\061306\720-
Dilution: 1.0 | Initial Weight/Volume: 40 mL
Date Analyzed: 06/13/2006 1638 | Final Weight/Volume: 40 mL
Date Prepared: 06/13/2006 1638

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	4.3		0.50
1,1-Dichloroethane	0.50		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	98	77 - 121
4-Bromofluorobenzene	109	79 - 118
1,2-Dichloroethane-d4	110	78 - 117

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Client Sample ID: MW-4

Lab Sample ID: 720-3999-4
Client Matrix: Water

Date Sampled: 06/09/2006 0816
Date Received: 06/09/2006 1215

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 06/12/2006 1758
Date Prepared: 06/12/2006 1758

Analysis Batch: 720-9865

Instrument ID: Varian 3900G
Lab File ID: c:\saturnws\data\200606\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	0.64		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	94	77 - 121
4-Bromofluorobenzene	94	79 - 118
1,2-Dichloroethane-d4	94	78 - 117

Client: Crawford Consulting Inc | Job Number: 720-3999-1

Client Sample ID: **DUP-1**

Lab Sample ID: 720-3999-5 | Date Sampled: 06/09/2006 0000
Client Matrix: Water | Date Received: 06/09/2006 1215

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B | Analysis Batch: 720-9865 | Instrument ID: Varian 3900G
Preparation: 5030B | Lab File ID: c:\saturnws\data\200606\06
Dilution: 1.0 | Initial Weight/Volume: 40 mL
Date Analyzed: 06/12/2006 1832 | Final Weight/Volume: 40 mL
Date Prepared: 06/12/2006 1832

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	0.90		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	9.7		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	94	77 - 121
4-Bromofluorobenzene	100	79 - 118
1,2-Dichloroethane-d4	98	78 - 117

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Client Sample ID: **DUP-1**

Lab Sample ID: 720-3999-5
Client Matrix: Water

Date Sampled: 06/09/2006 0000
Date Received: 06/09/2006 1215

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B
Preparation: 5030B
Dilution: 40
Date Analyzed: 06/13/2006 1458
Date Prepared: 06/13/2006 1458

Analysis Batch: 720-9929

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061306\720-
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result (ug/L)	Qualifier	RL
Tetrachloroethene	1500		20

Client: Crawford Consulting Inc | Job Number: 720-3999-1

Client Sample ID: **TB-1**

Lab Sample ID: 720-3999-6TB | Date Sampled: 06/09/2006 0000
Client Matrix: Water | Date Received: 06/09/2006 1215

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method: 8260B | Analysis Batch: 720-9865 | Instrument ID: Varian 3900G
Preparation: 5030B | Lab File ID: c:\saturnws\data\200606\06
Dilution: 1.0 | Initial Weight/Volume: 40 mL
Date Analyzed: 06/12/2006 1111 | Final Weight/Volume: 40 mL
Date Prepared: 06/12/2006 1111

Analyte	Result (ug/L)	Qualifier	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	%Rec	Acceptance Limits
Toluene-d8	91	77 - 121
4-Bromofluorobenzene	100	79 - 118
1,2-Dichloroethane-d4	96	78 - 117

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

Client: Crawford Consulting Inc

Job Number: 720-3999-1

QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
GC/MS VOA				
Analysis Batch:720-9865				
LCS 720-9865/7	Lab Control Spike	Water	8260B	
MB 720-9865/8	Method Blank	Water	8260B	
720-3987-B-4 MS	Matrix Spike	Water	8260B	
720-3987-B-4 MSD	Matrix Spike Duplicate	Water	8260B	
720-3999-4	MW-4	Water	8260B	
720-3999-5	DUP-1	Water	8260B	
720-3999-6TB	TB-1	Water	8260B	
Analysis Batch:720-9866				
LCS 720-9866/7	Lab Control Spike	Water	8260B	
MB 720-9866/8	Method Blank	Water	8260B	
720-3993-B-1 MS	Matrix Spike	Water	8260B	
720-3993-C-1 MSD	Matrix Spike Duplicate	Water	8260B	
720-3999-1	MW-1	Water	8260B	
720-3999-2	MW-2	Water	8260B	
Analysis Batch:720-9929				
LCS 720-9929/7	Lab Control Spike	Water	8260B	
MB 720-9929/8	Method Blank	Water	8260B	
720-3999-3	MW-3	Water	8260B	
720-3999-5	DUP-1	Water	8260B	
720-3999-5MS	Matrix Spike	Water	8260B	
720-3999-5MSD	Matrix Spike Duplicate	Water	8260B	

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Method Blank - Batch: 720-9865

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-9865/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/12/2006 1037
Date Prepared: 06/12/2006 1037

Analysis Batch: 720-9865
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900G
Lab File ID: c:\saturnws\data\200606\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8	92	77 - 121
4-Bromofluorobenzene	96	79 - 118
1,2-Dichloroethane-d4	108	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Laboratory Control Sample - Batch: 720-9865

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-9865/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/12/2006 1003
Date Prepared: 06/12/2006 1003

Analysis Batch: 720-9865
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian 3900G
Lab File ID: c:\saturnws\data\200606\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	18	89	65 - 125	
Trichloroethene	20.0	18	90	74 - 134	
Chlorobenzene	20.0	21	106	61 - 121	

Surrogate	% Rec	Acceptance Limits
Toluene-d8	95	77 - 121
4-Bromofluorobenzene	96	79 - 118
1,2-Dichloroethane-d4	97	78 - 117

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-9865

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-3987-B-4 MS
Client Matrix: Water
Dilution: 10
Date Analyzed: 06/12/2006 1400
Date Prepared: 06/12/2006 1400

Analysis Batch: 720-9865
Prep Batch: N/A

Instrument ID: Varian 3900G
Lab File ID: c:\saturnws\data\200606\(
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-3987-B-4 MSD
Client Matrix: Water
Dilution: 10
Date Analyzed: 06/12/2006 1434
Date Prepared: 06/12/2006 1434

Analysis Batch: 720-9865
Prep Batch: N/A

Instrument ID: Varian 3900G
Lab File ID: c:\saturnws\data\200606\06
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethene	93	88	65 - 125	6	20		
Trichloroethene	89	86	74 - 134	3	20		
Chlorobenzene	110	105	61 - 121	5	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8	94	94	77 - 121
4-Bromofluorobenzene	95	96	79 - 118
1,2-Dichloroethane-d4	95	98	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Method Blank - Batch: 720-9866

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-9866/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/12/2006 1109
Date Prepared: 06/12/2006 1109

Analysis Batch: 720-9866
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061206\MB
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8	100	77 - 121
4-Bromofluorobenzene	109	79 - 118
1,2-Dichloroethane-d4	108	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Laboratory Control Sample - Batch: 720-9866

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-9866/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/12/2006 1035
Date Prepared: 06/12/2006 1035

Analysis Batch: 720-9866
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061206\LC
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	19	96	65 - 125	
Trichloroethene	20.0	18	91	74 - 134	
Chlorobenzene	20.0	20	102	61 - 121	

Surrogate	% Rec	Acceptance Limits
Toluene-d8	100	77 - 121
4-Bromofluorobenzene	108	79 - 118
1,2-Dichloroethane-d4	103	78 - 117

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-9866

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-3993-B-1 MS
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/12/2006 1355
Date Prepared: 06/12/2006 1355

Analysis Batch: 720-9866
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061206\72
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-3993-C-1 MSD
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/12/2006 1429
Date Prepared: 06/12/2006 1429

Analysis Batch: 720-9866
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061206\720
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethene	84	91	65 - 125	9	20		
Trichloroethene	86	91	74 - 134	5	20		
Chlorobenzene	97	104	61 - 121	7	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8	100	100	77 - 121
4-Bromofluorobenzene	108	111	79 - 118
1,2-Dichloroethane-d4	99	106	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Method Blank - Batch: 720-9929

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-9929/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/13/2006 1045
Date Prepared: 06/13/2006 1045

Analysis Batch: 720-9929
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061306\MB
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Result	Qual	RL
1,1-Dichloroethene	ND		0.50
1,1-Dichloroethane	ND		0.50
Dichlorodifluoromethane	ND		0.50
Vinyl chloride	ND		0.50
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
Methylene Chloride	ND		5.0
trans-1,2-Dichloroethene	ND		0.50
cis-1,2-Dichloroethene	ND		0.50
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		0.50
Carbon tetrachloride	ND		0.50
1,2-Dichloroethane	ND		0.50
Trichloroethene	ND		0.50
1,2-Dichloropropane	ND		0.50
Dichlorobromomethane	ND		0.50
trans-1,3-Dichloropropene	ND		0.50
cis-1,3-Dichloropropene	ND		0.50
1,1,2-Trichloroethane	ND		0.50
Tetrachloroethene	ND		0.50
Chlorodibromomethane	ND		0.50
Chlorobenzene	ND		0.50
Bromoform	ND		1.0
1,1,2,2-Tetrachloroethane	ND		0.50
1,3-Dichlorobenzene	ND		0.50
1,4-Dichlorobenzene	ND		0.50
1,2-Dichlorobenzene	ND		0.50
Chloromethane	ND		1.0
Bromomethane	ND		1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50
EDB	ND		0.50
1,2,4-Trichlorobenzene	ND		1.0

Surrogate	% Rec	Acceptance Limits
Toluene-d8	101	77 - 121
4-Bromofluorobenzene	108	79 - 118
1,2-Dichloroethane-d4	109	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Laboratory Control Sample - Batch: 720-9929

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 720-9929/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/13/2006 1011
Date Prepared: 06/13/2006 1011

Analysis Batch: 720-9929
Prep Batch: N/A
Units: ug/L

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061306\LC
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	20.0	18	92	65 - 125	
Trichloroethene	20.0	18	90	74 - 134	
Chlorobenzene	20.0	20	101	61 - 121	

Surrogate	% Rec	Acceptance Limits
Toluene-d8	101	77 - 121
4-Bromofluorobenzene	111	79 - 118
1,2-Dichloroethane-d4	101	78 - 117

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-9929

Method: 8260B
Preparation: 5030B

MS Lab Sample ID: 720-3999-5
Client Matrix: Water
Dilution: 40
Date Analyzed: 06/13/2006 1531
Date Prepared: 06/13/2006 1531

Analysis Batch: 720-9929
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061306\72
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

MSD Lab Sample ID: 720-3999-5
Client Matrix: Water
Dilution: 40
Date Analyzed: 06/13/2006 1604
Date Prepared: 06/13/2006 1604

Analysis Batch: 720-9929
Prep Batch: N/A

Instrument ID: Saturn 2K3
Lab File ID: d:\data\200606\061306\720
Initial Weight/Volume: 40 mL
Final Weight/Volume: 40 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1-Dichloroethene	86	87	65 - 125	2	20		
Trichloroethene	84	85	74 - 134	1	20		
Chlorobenzene	98	99	61 - 121	2	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8	99	99	77 - 121
4-Bromofluorobenzene	109	105	79 - 118
1,2-Dichloroethane-d4	107	105	78 - 117

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEVERN TRENT SERVICES

STL San Francisco

Chain of Custody

1220 Quarry Lane ● Pleasanton CA 94566-4756
Phone: (925) 484-1919 ● Fax: (925) 484-1096
Email: info@chromalab.com

720-3999

Reference #: 41288

Date 6/9/06 Page 1 of 1

From

Proj.Mgr	Mark Wheeler
Company	Crawford Consulting, Inc.
Address	2 North First Street, 4th Floor San Jose, CA 95113
Sampler (Signature)	
Phone (408) 287-9934	Fax/Email (408) 287-9937

Analysis request

Sample ID	Date	Time	Mat	Pres	TPH (EPA 8015, 8020/8021) ☐Gas w/ ☐BTEX ☐MTBE	Purgeable Aromatics BTEX (EPA 8020)	TEPH (EPA 8015M) ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other	Fuel Oxygenates (8260B) ☐ MTBE ☐Full List ☐DCA, EDB ☐ BTEX	Purgeable Halocarbons (HVOCs) (EPA 8010/8021)	Volatile Organics (VOCs) (EPA 8021B)	Semivolatiles (EPA 8270)	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	☐ Pesticides (EPA 8081) ☐ PCBs (EPA 8082)	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Iron (6010/7420) Manganese (6010/7420)	Total Lead	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec Cond. ☐ TSS ☐ Alkalinity ☐ TDS	Anions : ☐ Cl ☐SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO ☐ PO	Total Organic Carbon (415.1)			Number of Containers
MW-1	6/9/06	1045	H2O	HCl						X																3
MW-2	6/9/06	1124	H2O	HCl						X																3
MW-3	6/9/06	1009	H2O	HCl						X																3
MW-4	6/9/06	0814	H2O	HCl						X																3
DUP-1	6/9/06	—	H2O	HCl						X																3
TB-1	6/9/06	—	H2O	HCl						X																3

Page 19 of 20

Project Info.

Project Name: Alameda Facility

Project#: CS1605

PO#:

Sample Receipt

of Containers:

Head Space:

Temp:

Conforms to record:

Other

TAT: Std 5 Day | 72h | 48h | 24h

Report: ☐Routine ☐Level 2 ☐Level 3 ☐Level 4 ☐EDD

Special Instructions / Comments:

Please provide **fax preliminary results** to Crawford Consulting at the number listed above.

Please refer to Project File for detection limits and report MRLs only.

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature Time: 1215	Signature Time	Signature Time
Printed Name: Manuel Gallegos Date: 6/9/06	Printed Name Date	Printed Name Date
Company: Field Solutions Inc. (408) 281-2322	Company	Company
1) Received by:	**2) Received by:**	**3) Received by (Laboratory):**
Signature Time: 1215	Signature Time	Signature Time
Printed Name: Joan Mullen Date: 6-9-06	Printed Name Date	Printed Name Date
Company: STLSF	Company	Company

3/11/2001

LOGIN SAMPLE RECEIPT CHECK LIST

Client: Crawford Consulting Inc

Job Number: 720-3999-1

Login Number: 3999

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present, is intact.	NA	
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	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True